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**PROVIDING GREATER OLD-AGE SECURITY IN CHINA**

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by  
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## ABSTRACT/RÉSUMÉ

### Providing greater old-age security in China

China's population is set to age fast, owing to low fertility and rising life expectancy. With ongoing migration of the younger cohorts to urban areas the increase in the old-age dependency ratio will be even more pronounced in rural than in urban areas. Very different pension arrangements exist across the country, with diverse and segmented systems in urban areas, belated retirement and low replacement ratios in rural areas, and special rules governing public sector pensions. Labour mobility is impeded by some of features of the current pension system, not least limited benefit portability. Various reforms have been initiated or proposed over the past decade. Some add to the existing fragmentation, while others, notably those providing for greater geographical pooling, have only partly been implemented. Also, under current rules, effective replacement rates are fairly low and projected to decline further, both for rural and urban residents, which may be difficult to sustain with the elderly living less and less with their descendants. Furthermore, as the countryside ages, much of the additional burden will be shouldered by local governments with insufficient resources. These challenges can be addressed by gradually consolidating the various regimes, raising retirement ages and shifting more of the cost of rural pensions to the central government. Even if different schemes for different categories of workers were to persist, each should be unified over time, first provincially and then nationally, phasing out the urban-rural distinction.

This Working Paper relates to the 2010 *OECD Economic Survey of China* ([www.oecd.org/eco/surveys/china](http://www.oecd.org/eco/surveys/china))

JEL classification: H55; J11; J13; J14; J32; J61; N35; O15; O53; P21; P25; P26; P36.

Keywords: China; ageing; demographic projections; pension system; labour mobility; benefit portability; replacement rates; retirement age; poverty.

### Offrir davantage de sécurité aux personnes âgées en Chine

La population de la Chine devrait vieillir rapidement, en raison d'une faible fécondité et de l'allongement de l'espérance de vie. Dans un contexte de migration des cohortes plus jeunes vers les agglomérations, la hausse du taux de dépendance économique des personnes âgées sera encore plus soutenue en milieu rural que dans les zones urbaines. Des mécanismes de retraite très variés co-existent: systèmes divers et segmentés en ville, retraite tardive et faibles taux de remplacement dans les campagnes, et règles spécifiques régissant les retraites du secteur public. La mobilité de la main d'œuvre est freinée par certains aspects du système de retraite actuel, notamment une portabilité restreinte des prestations. Des réformes ont été initiées ou proposées au cours de la décennie écoulée. Certaines accentuent la fragmentation existante, alors que d'autres, en particulier celles visant à intensifier le regroupement géographique, n'ont été que partiellement mises en œuvre. De plus, d'après les règles en vigueur, les taux de remplacement effectifs sont assez bas et devraient poursuivre leur repli, pour les ruraux comme pour les citadins, ce qui pourrait entraîner une situation difficilement tenable puisque les plus âgés vivent de moins en moins souvent avec leurs descendants. De surcroît, en raison du vieillissement de la population rurale, une grande partie du surcoût devra être supporté par des collectivités locales dotées de ressources insuffisantes. Il est possible de remédier à ces difficultés en fusionnant progressivement les différents régimes, en relevant l'âge de la retraite et en reportant une plus grande fraction du coût des retraites en milieu rural sur le gouvernement central. Même si différents régimes devaient subsister pour différentes catégories de travailleurs, il faudra les fusionner au fil du temps, tout d'abord à l'échelon provincial, puis sur le plan national, en supprimant peu à peu la distinction entre les villes et les campagnes.

Ce Document de travail a trait à l'*Étude économique de l'OCDE de la Chine*, 2010 ([www.oecd.org/eco/etudes/chine](http://www.oecd.org/eco/etudes/chine)).

Classification JEL : H55; J11; J13; J14; J32; J61; N35; O15; O53; P21; P25; P26; P36.

Mots clés: Chine; vieillissement; projections démographiques; système de retraite; mobilité de la main d'œuvre; taux de remplacement; âge du départ en retraite; pauvreté.

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## PROVIDING GREATER OLD-AGE SECURITY IN CHINA

By Richard Herd, Yu-Wei Hu and Vincent Koen<sup>1</sup>

1. China's population is set to age fast and urbanisation is likely to continue. In this context, improving income security for the elderly is key to strengthening the social safety net, alongside healthcare reform (OECD, 2010). Very different pension arrangements currently exist in rural and in urban areas, and yet another set of rules governs public sector pensions. After spelling out the challenges implied by China's demographic trends, this paper analyses the pension problems arising in rural areas and then those related to the urban old-age support system, including the arrangements for government employees. As in the case of labour markets, mobility is impeded by some institutional features, not least limited benefit portability. Reforms have been launched both in the rural and in the urban areas, which the paper reviews and assesses.

### The demographic and social context

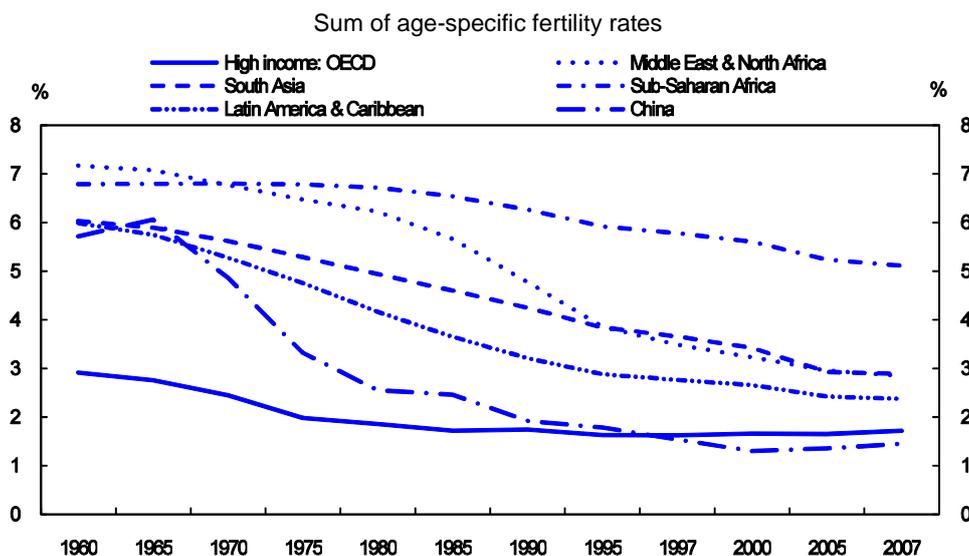
#### *Ageing in China: an overview*

2. Many countries around the world see their populations age and China is no exception. This trend stems from different factors. Rapidly declining birth rates are a common one. Falls in infant and maternal mortality were initially important in advanced economies, and still are in lower-income countries. In more developed economies, growing life expectancy for people above 50 has been a main factor. In China, the fertility rate has dropped rapidly to below the OECD average (Figure 1). The number of children born per woman (total fertility rate – TFR – estimated as the sum of age-specific fertility rates) dropped markedly from as early as 1960. From 1971 onwards the fall was accentuated by the government policy inciting families to have “later, fewer and sparser” children and setting high age floors for a woman's first marriage – 23 in rural and 25 in urban areas (Coale, 1984), while some provinces also encouraged men to marry at an older age than allowed by law (Fang *et al.*, 2005). The one-child family policy was introduced in 1980 and brought the fertility rate down to 1.8 by 1990. Since then, the birth rate has reportedly edged lower, to under 1.5, *i.e.* below most high-income OECD countries. The reliability of the fertility data has been questioned, however. The 2002 Census reported TFR of 1.2 was deemed implausible due to under-reporting of births by up to 20%. Under-reporting of population is generally understood to ease as a given cohort ages. As a result it is possible to impute the fertility rate of a given cohort from data reporting the size of the same birth cohort at age 20. Such a methodology suggests that by 2000, the TFR was slightly below 1.5 (Retherford *et al.*, 2005). For China, though, the TFR is a misleading indicator of population sustainability due to the large imbalance between baby girls and boys. Sustainability depends on the total number of girls that each woman gives birth to. Census data suggest that women were bearing only 0.66 girls over their lifetime in the late 1990s, well below the replacement figure of just over unity, equivalent to a TFR of 1.58 (Cai *et al.*, 2008).

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1. Richard Herd heads the China/India Desk in the Economics Department of the OECD, Yu-Wei Hu was a consultant working on this Desk in 2009 and Vincent Koen heads the Division this Desk belongs to. A shorter version of this paper appeared as a chapter in the *OECD Economic Survey of China* published in February 2010 on the responsibility of the Secretary-General of the OECD. Useful feedback on earlier drafts was received in Beijing from Chinese experts in the context of two seminars organised by the State Information Centre in July and October 2009, and at the OECD from Andrew Dean and Robert Ford. Thomas Chalaux provided technical assistance and Nadine Dufour and Lillie Kee editorial assistance.

Figure 1. Total fertility rate across regions



Source: World Development Indicators, National Bureau of Statistics G synch survey 2009 pensions TFR.

3. Despite a fertility rate above unity, China's one-child policy seems to have been largely followed. In practice, only 35% of the population live in areas where families are limited to one child. More than half the population (54%) live in areas where two children are allowed if the first child is a girl or if there is a four-year interval between births. In remaining areas there are no limits on family size (Gu, 2007). Minority populations, with the exceptions of the Manchu and Zhuang groups (Li *et al.*, 2005), are not subject to the one-child family policy, but even so their fertility rate had fallen to two by 2000 (Retherford *et al.*, 2005). Calculations based on the family planning regulations applicable in different regions and for different ethnicities suggest that strict observance of the policy should generate a TFR of 1.47 (Gu *et al.*, 2007), in line with that found in recent censuses and estimated by academic demographers. Somewhat surprisingly, the National Population and Family Planning Commission (2009) estimates that the TFR is 1.8 and this fertility rate is used in official population projections.

Table 1. Life expectancy at different ages across countries

OECD average weighted by population				
Age	1990	2000	2006	Change 1990 to 2006
<b>China</b>				
<1	68.4	71.1	73.4	5.0
60-64	17.4	18.3	19.0	1.6
65-69	13.9	14.6	15.2	1.3
70-74	10.8	11.3	11.8	1.0
<b>High-income OECD countries</b>				
<1	75.9	78.0	79.5	3.6
60-64	20.9	22.3	23.4	2.5
65-69	17.1	18.4	19.4	2.4
70-74	13.6	14.7	15.7	2.0

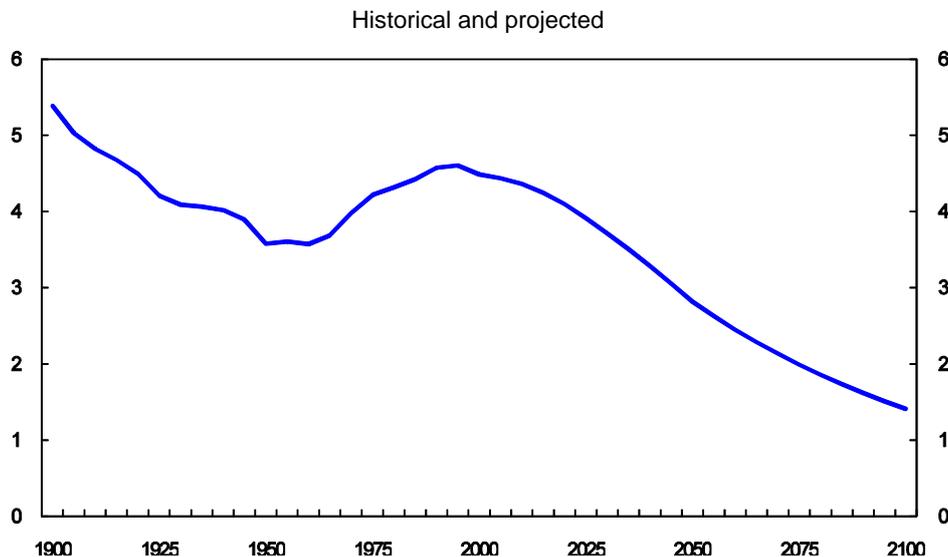
Source: WHO Life Expectancy Database.

4. Life expectancy also increased rapidly over the past 50 years, particularly in the three decades to 1980, when infant mortality declined markedly. Such declines in infant mortality are usually the first stage in population ageing but do not increase the share of the elderly, rather they raise the share of youth. This phase was followed by a decrease in fertility, in line with international experience (Lee, 2003). China has not yet entered the third phase of ageing when the life expectancy of the elderly rises. Thus, while life expectancy at birth increased by five years between 1990 and 2006, it rose by only one year at age 70. This contrasts with the experience in advanced economies where life expectancy at birth has increased less than in China but that of the elderly has risen more (Table 1).

5. These fertility and life expectancy changes have markedly altered the structure and growth rate of the Chinese population. In 1980, the structure was bottom-heavy, typical of a young and growing population. By 1990, the age structure was more mature, with a bulge in the working-age groups and a relatively small child population, foreshadowing population decline down the road.

6. Population projections hinge on uncertain estimates of fertility and mortality. The 2008 UN central population projections rest on a total fertility rate of 1.8, at the high end of existing estimates. These projections show the population reaching 1.4 billion in 2030 from the current 1.3 billion and declining only slightly by 2050. By contrast, projections based a normal distribution of fertility around the current level of 1.5 suggest that the population will be 1.25 billion in 2050, with the 95% probability range spanning 1.1 to 1.5 billion (Lutz *et al.*, 2007). In any event, China's low fertility is likely to result in a marked narrowing of the gap between the population of the United States and that of China: by 2080, China's population could be only 1.6 times as large as that of the United States, down from the current ratio of close to 4.5 (Figure 2).

**Figure 2. Chinese population relative to that of the United States**



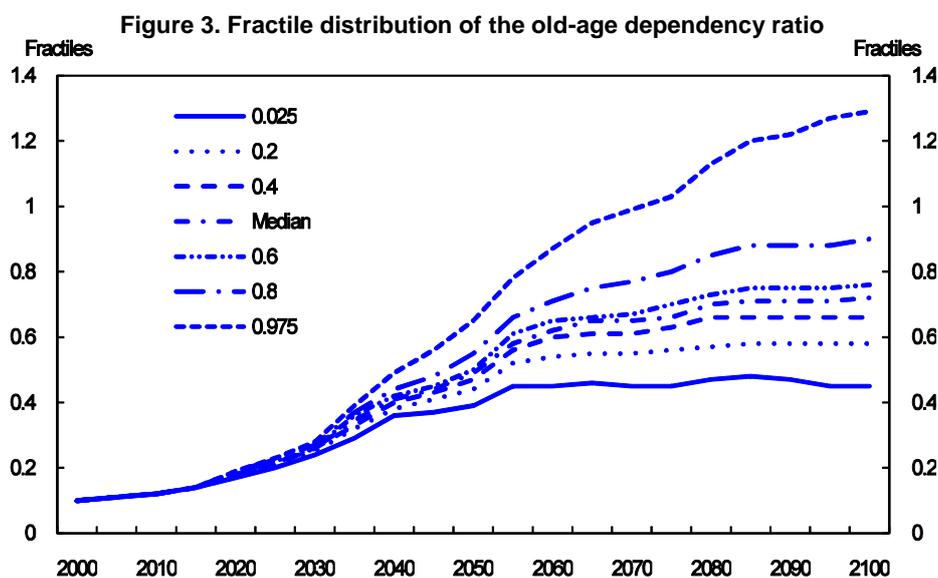
Source: Projections of the US Bureau of Census and Board of Trustees of the Social Security Administration; Lutz *et al.* (2007).

7. With low fertility and rising life expectancy, the old-age dependency ratio (defined as the ratio of the elderly to those aged 15 to 64) is projected to reach 24% in 2030, up from 0.11 in 2010.<sup>2</sup> There is little uncertainty surrounding the 2030 estimate, since almost all of the people in the 15+ age groups are

2. The 2008 UN projections do not appear to incorporate the results of the latest sample population surveys. The 2007 survey put the dependency ratio at 0.128.

currently living. Further out, the dependency ratio for 2050 may well exceed the low UN variant (43%), even if the growth of the elderly population were to slacken. Over an even longer time span, such as the 75-year horizon often used for pension planning, Lutz *et al.* (2007) put the probability that the dependency ratio would rise to 75% at 60% (Figure 3). Moreover, the proportion of the elderly over 80 will start to rise significantly after 2030.

8. Economic development in China has been accompanied by increased urbanisation. By 2007, 45% of the population lived in urban areas, which are now defined according to population density and contiguity with dense population areas, rather than administrative category of a locality. Urbanisation has not come about through natural expansion, which is limited by the strict application of the one-child policy in urban areas, but through migration, with a concentration on younger age-groups. While some migrants return home, they have tended to stay longer.



Source: Lutz *et al.* (2007).

The old-age dependency ratio is defined as the over-65 divided by the 15-to-65 population. The lines depict the probability that this ratio would be below the shown level.

9. Migration of the young to urban areas is raising the proportion of the elderly in the rural population. The government has a target of achieving a 70% urbanisation rate by 2050 (National Population and Family Planning Commission, 2009), and maybe almost 80% (China Academy of Sciences, 2005). Given the rural/urban population split, the age distribution of migrants and assumptions on fertility in rural and urban areas, it is possible to generate age profiles for the future rural and urban populations based on the UN projections of urbanisation (O'Neill and Scherbov, 2006). On this basis, the absolute increase in the number of elderly is set to be highest in urban areas, but with a very rapid growth in the working-age population, while the rural working-age population will fall. As a result, the rural old-age dependency ratio will reach 34% by 2030, as against 18% in the urban areas (Table 2). Zeng *et al.* (2008) suggest that, if urbanisation reaches 75%, the dependency ratio is likely to continue to rise rapidly in rural areas and may exceed 60% by 2050, versus just over 30% in urban areas. This rural dependency ratio would be similar to that expected on average in 2050 for OECD countries with low fertility rates (such as Germany, Italy and Japan), but without the institutional support system available in those countries. On the other hand, the dependency ratio in urban areas is likely to be similar to that in the United States.

**Table 2. Projections of elderly population and dependency ratios**

	Elderly population (65+)			Elderly dependency ratio (as proportion of working population)			Elderly population as proportion of total population		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
	Millions			%			%		
2000	58	29	86	10.8	8.4	9.9	7.0	6.4	6.7
2030	122	113	235	34.1	18.0	23.9	20.2	13.0	15.7

Source: O'Neill and Scherbov (2006).

10. Migrants' growing tendency to settle in cities has raised the number of children in rural areas relative to the population. The poor and costly provision of education for migrant children in cities is one reason why many are left behind in the countryside. They are looked after by grandparents or other relatives (47%) when the couple is in the city, or by the mother (25%) when the father is in the city. In 2005, 58 million children under 18 were left behind, up 28% from 2000 (All-China Women's Federation, 2007). This puts a heavy burden on grandparents who look after the bulk of left-behind children.

#### *Living arrangements in urban and rural areas*

11. The changing spatial and demographic composition of the population has implications for the future income and care of the elderly. In China it has been a tradition and moral obligation for younger adults (especially sons) to support their elderly parents. This tradition has generated extended family living arrangements common to the whole of East Asia. In China, it is reinforced by laws that state that the main form of support for the elderly should be that given by children and that the elderly have an enforceable right to that support (the key laws being Article 21 of the 2001 Marriage Law and Article 10 of the 1996 law on the Protection of the Rights of the Elderly). However, in recent years the traditional extended family arrangement has been undergoing a rapid transformation, in both urban and rural areas. The change has started with a marked reduction in the number of two-generation households and growth in the number of single-generation households (Table 3). This change may be due to evolving social norms and values and rising incomes. Chinese, particularly the younger generation, increasingly care about their privacy and their personal life, finding it more convenient to live independently from their parents. Many have left their hometown to settle elsewhere. The development of a commercial housing market in the past decade has contributed to this trend.

**Table 3. Family structure of households**

	% of households		
	Generations in a household		
	One	Two	Three +
1982	13.9	66.6	19.5
1990	13.5	67.5	19.0
2000	22.3	56.8	20.9
2006	28.5	53.7	17.8

Source: Yi and Zhang (forthcoming) using census microdata, 2007; China *Population and Labour Yearbook* (2007).

12. The living arrangements of the elderly have evolved accordingly. The number of single-generation elderly households has risen markedly across the country, especially couples living separately from their children, but the proportion living alone is about 10 percentage points higher in urban than in rural areas (Giles and Wang, 2007). The change started in the 1990s but has gained pace since (Table 4). However, as yet, there has not been a marked change in the proportion of elderly people living alone. Indeed, once elderly people, especially women, are left alone, they change domicile and usually live with their son. In 2000 in rural areas, over 80% of women above 80 were living with their children and this proportion was only slightly lower in urban areas.

**Table 4. Living arrangements of the elderly over time in China**

	% of population age 65 and over					
	Living with children			Couple or single		
	Male	Female	All	Male	Female	All
1982	71.6	74.2	73.1	26.8	24.6	25.6
1990	69.5	75.0	72.5	29.8	24.4	26.9
2000	61.6	69.6	65.8	37.4	29.9	33.4
2005	53.9	59.5	56.7	44.1	38.9	41.5

Source: Gao (2008) using census microdata.

13. The proportion of elderly living with their family has dropped at a much earlier stage of economic development than in other East Asian countries. By around 2005, the proportion of elderly living with their families in China was much lower than in Chinese Taipei or Singapore and only slightly higher than in Japan, Korea and Hong Kong, China, although it remains far above North America and Europe (Table 5). Some specific factors may have helped speed the fall in the proportion of

**Table 5. Living arrangements of elderly households: an international comparison**

2000, refers to people aged 60 or 65

	Alone	Couple	With children
	% of population over 60 or 65		
Over 65			
China (2005)	9	33	57
Japan	13	29	54
Korea	17	29	49
Hong Kong, China (2004)	11	18	57
Over 60			
Philippines	5	11	71
Singapore	3	6	85
Chinese Taipei	9	16	70
Thailand	4	6	78
Germany	36	56	8
United States	27	57	18
United Kingdom	31	59	12

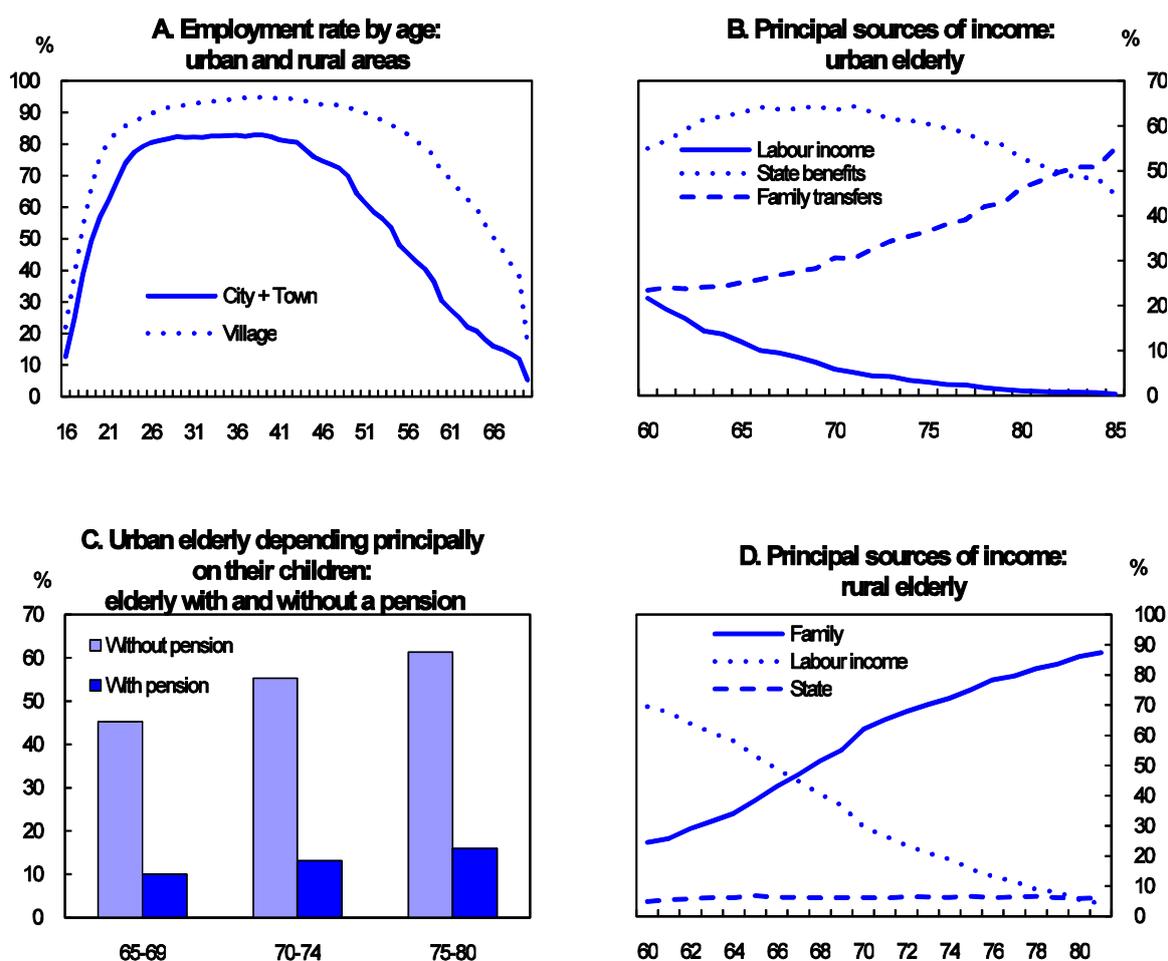
Source: Asian countries: Hermalin *et al.* (2006), except Korea, Japan and China: Kim and Maeda (2001). Advanced economies: Bosworth *et al.* (2005); Hong Kong: Hong Kong Council of Social Services (2007).

elderly living with their children in China. In urban areas, the strict family planning policy has led to a significant portion of families having only a daughter, which lowers the probability of parents living with their child. In rural areas, migration reduces the supply of younger couples able to live with their parents. Instead the grandparents are left looking after their grandchildren.

### Sources of income support for the elderly

14. The support system for the elderly differs greatly between rural and urban areas. One stark difference is that in rural areas, the elderly continue to work much longer (Figure 4, panel A). The gap between the labour force participation rates (which are typically higher in rural than urban areas at working ages) widens even more beyond the age of 50. The fall in participation is led by that of women in urban areas. Based on the age-specific activity rates shown in the 2005 census, the average working life in rural areas was 10 years longer than in urban areas. Indeed, rural residents continue to work on their family smallholding until prevented by their health (Pang *et al.*, 2004; Benjamin *et al.*, 2003). In urban areas, however, the concept of a transition between work and retirement is well established. In the 60-64 age range, the employment rate has fallen to 25%, similar to that found in Hong Kong, China and Chinese Taipei but about half of that seen in a number of OECD countries (Table 6).

Figure 4. Sources of income for the elderly



Source: Panel A, B, D Tabulations of the 2005 Census. Panel C Tabulations of the 2006 China Health and Nutrition Survey.

15. The low urban employment rate appears to be linked to the prevalence of pensions in urban areas. Payments from the government are the main source of income for most Chinese urban elderly (Figure 4, panel B). The reliance on family support grows as the elderly age. Amongst the urban elderly with pensions, the proportion stating that their main source of income is their children is low and barely rises with age. However, for the fifth of the urban population without pensions, support by children is four times as pronounced and grows with age (Figure 4, panel C). Children's transfers to parents tend to be higher when parents have low incomes but not by enough to fully insure the elderly against the risk of low income in old age (Cai *et al.*, 2006).

**Table 6. Labour force participation rates by age**

	50 to 54	55 to 59	60 to 64	65+
China national	75.9	65.1	49.1	19.7
China rural	88.7	81.1	65.9	27.6
China urban	59.3	43.1	25.3	8.9
Hong Kong, China	65.2	47.8	28.1	6.9
Chinese Taipei	62.1	44.0	30.9	7.4
Average of following OECD countries	79.0	68.3	45.9	13.8
France	78.8	54.6	14.4	1.1
Japan	80.6	73.9	52.6	19.4
Korea	72.6	63.2	54.5	30.3
Sweden	84.3	79.5	59.6	10.1
United Kingdom	79.9	69.0	43.2	6.8
United States	77.9	69.8	51.0	14.9

Source: National Bureau of Statistics, 2005 Census data tabulations; Hong Kong, China Statistical Office; Statistical Office of Chinese Taipei; OECD Employment Database.

16. In rural areas, the nature of income support of the elderly is completely different. An elderly person's principal income source is either employment income or family support – the first declining with age and the second increasing (Figure 4, panel D). Support from a pension is practically non-existent – less than 4% of the rural elderly stated that a pension was their principal source of income in the 2005 Census. However, the prevalence of work after retirement is not any more immutable than the tradition of support by children. In rural Shanghai, pension provision has been relatively generous and as a result rural residents have become more aware of a possible divide between work and retirement, together with a changing view on the likelihood that children will support parents financially in their old age (Shi, 2008).

### ***The income of the elderly***

17. With many of the elderly still living in multi-generation households, a precise analysis of their income is difficult. Household surveys only collect total household income and there is no way of knowing how consumption is shared within the household. Moreover, only a few researchers have had access to the basic unit level data of the household survey. The household survey data show the number of households in which there is an elderly person and the income of those households. On that basis, the absolute poverty rate (measured using the World Bank poverty line) of households including an elderly person is essentially no different to that of the whole population in rural areas. In urban areas, the absolute poverty rate is around 5%, versus 13% or so in rural areas. Even if the poverty line is raised to twice the World Bank minimum, the absolute poverty rate is low and may even be slightly lower for the elderly than for those of working age (Table 7).

**Table 7. Estimates of absolute poverty in rural and urban areas**

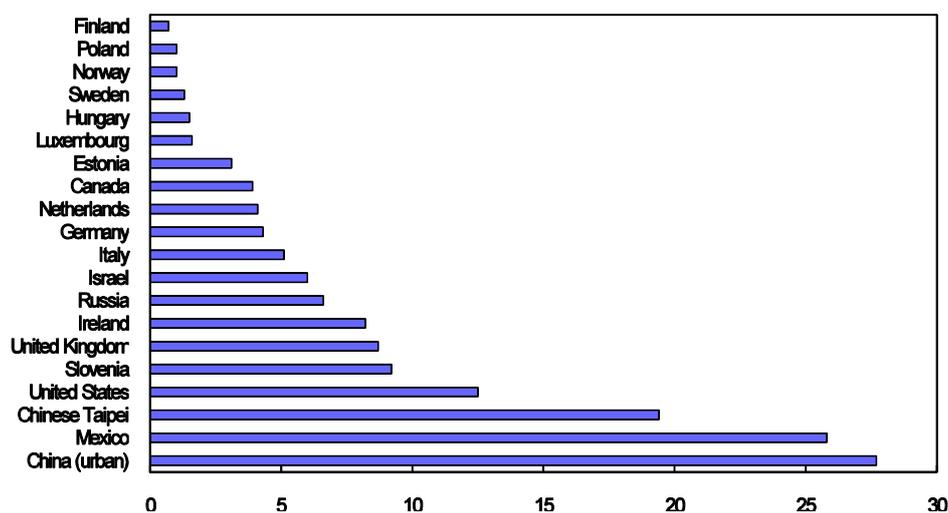
	Population	% poor	Number poor
	Millions		Millions
<b>Urban</b>			
Men	20.6	4.0	0.8
Women	20.2	5.6	1.1
Total	40.8	4.7	1.9
<b>Rural</b>			
Men	54.3	12.8	6.9
Women	54.9	13.0	7.2
Total	109.2	12.9	14.1

Source: World Bank (2009).

18. The picture of poverty in urban areas changes markedly if the incomes of the elderly living alone or as a couple are compared to the officially-determined minimum living standard or measured in relative rather than absolute terms. These minima vary across areas, not just as a function of local incomes but also according to the resources available for paying welfare benefits. On this basis, the poverty rate amongst the elderly rises to 13% and is almost 26% for single women living alone (Saunders, 2006). Using a relative measure of poverty (half of median income – a common benchmark in OECD countries), the prevalence of low incomes rises to somewhat above those in Mexico and Chinese Taipei, with about one quarter of all couples below this income line (Figure 5). For single elderly people living alone, the proportion is even higher, with almost half of the relevant population having incomes below 50% of the median.

**Figure 5. Relative poverty amongst the elderly**

% of elderly with income below half median income



Source: Saunders (2007).

19. There is some evidence that the elderly are starting to view poverty in relative rather than absolute terms. The 2005 China Health and Nutrition Survey shows that in rural areas, the proportion of the elderly considering that their income was inadequate was almost the same as the proportion of those in absolute poverty. However, in urban areas, where hardly anybody is below the absolute poverty line of

\$1.25 per day in 2005 PPP dollars or CNY 888 per person per year at 2003 rural prices per day, the proportion of the elderly feeling they are poor is four times greater than the share of the poor measured using the higher absolute poverty benchmark of \$2.50 per day. Even so, the proportion still appears to be lower than the proportion of the urban elderly with less than half of the median income.

20. Econometric evidence confirms this picture of the factors associated with poverty amongst the elderly (Table 8). A logistic equation was run to explain why individuals considered themselves in one of two categories (rich and very rich, or poor and very poor). These two categories are separated by a fifth, “average” category. The individual feelings were explained by a broad range of socio-economic and demographic variables linked to the health and medical insurance of the elderly. Overall, the results showed that the following characteristics made for feeling rich rather than poor: having a pension (most significantly); being in good health; not having to pay one’s own medical expenses; living with one’s children; in urban areas, having a male eldest child; being married rather than a widow or widower; having migrant children; being older; being of Han ethnicity (sometimes). These results confirm the importance of improving the social safety net across the country and not just in rural areas.

**Table 8. Odds ratios for feeling rich or poor in 2005**

Estimated from a logistic equation

	National		Urban		Rural	
	Odds ratio	Significance	Odds ratio	Significance	Odds ratio	Significance
<b>Feel rich or very rich</b>						
Male	1.142	***	1.275	***	1.105	*
Han ethnicity	1.150	***	1.188	*	-	-
Good health	0.599	***	0.672	***	0.543	***
Has a pension	2.096	***	1.444	***	2.795	***
Still working	-	-	-	-	-	-
Married	-	-	-	-	-	-
Lives with children	1.509	***	-	-	1.852	***
Self payment of medical treatment	0.647	***	0.611	***	0.678	***
Eldest child male	1.114	**	-	-	1.119	**
Child lives outside county	1.471	***	1.377	***	1.471	***
Age	1.142	***	1.275	***	1.105	*
	National		Urban		Rural	
<b>Feel poor or very poor</b>						
Male	-	-	-	-	-	-
Han ethnicity	-	-	-	-	-	-
Good health	1.833	***	1.468	***	1.956	***
Has a pension	0.318	***	0.302	***	0.269	***
Still working	1.395	***	-	-	1.468	-
Married	0.901	**	-	-	0.893	**
Lives with children	0.563	***	0.757	**	0.527	***
Self payment of medical treatment	1.576	***	1.848	***	1.502	***
Eldest child male	-	-	-	-	-	-
Child lives outside county	-	-	-	-	-	-
Age	0.993	***	-	-	0.992	***

Source: OECD estimates using the National Health and Nutrition Survey (2005), which covered 15 000 individuals in 2000. \* at 10% level, \*\* at 5% level, and \*\*\* at 1% level. -, insignificant or not applicable. Odds ratio (+/-) means that the independent variable increases/decreases the log odds of the dependent variable.

### ***Emerging challenges***

21. In sum, a number of inter-related factors are likely to affect the well-being of the elderly over the next 50 years. Above all there is the impact of a major demographic transition. Current fertility rates point to a likely significant population decline if current family planning policies are not changed. Ageing will accelerate. Rapid urbanisation will bring its own problems. It will be difficult to keep migrants' pensions on a different basis to those with urban residence permits when a majority of urban habitants are likely to be migrants. In addition, it will be difficult to maintain existing family-based support systems in rural areas when the elderly are likely to be concentrated there. The emerging national pension arrangements will have to deal with these challenges and the rest of the paper looks at how this might be achieved.

### **The rural old-age support system**

22. As noted, rural pensions are those most in need of improvement if the government is to achieve its goal of a universal social security system by 2020. There is no single best method for proceeding in this area. Experience in other countries varies: some systems cover the whole rural population while others apply only to farmers. Running through the discussion of pensions in China is the difference between rural and urban citizens in the provision of social security. A fundamental tenet of recent Chinese history was that the Revolution had rewarded peasants by transferring land to them. Urban workers were expected to share in the benefits of the Revolution through the provision of pensions.

### ***Past attempts at building a rural pension scheme***

23. Efforts to provide pensions to rural residents have had little momentum. A major barrier has been the entrenched view that land and family will provide for the economic safety of rural residents. The reality is changing rapidly, however: youth are leaving the land with the result that older people cannot maintain farms. At the same time, there is a need to raise agricultural productivity through consolidation of land holdings, while with urbanisation land is converted to non-agricultural use. Moreover for land to provide security, ownership must be certain, which is not the case in China (Box 1).

#### **Box 1. Property rights in rural areas**

There is no private ownership of land in China. Land is either owned by the state, in the case of urban land, or collectively by a village committee, in rural areas. In rural communities, farmers were first granted 15-year use-rights and then, under the 2002 Rural Land Contracting Law (RLCL), rights to 30 years for arable land and to 50 and 70 years for grazing and forest land, respectively. The 2007 Property Law further strengthens these rights by making the use-right a usufruct property right completely independent of the bare-owner provided the land is not damaged (it is thus similar to a lease in common-law countries but without any periodic payment to the ground landlord). The value of a 30-year rent-free lease is approximately two-thirds of the full value of the agricultural land, if the foregone rent is capitalised at a risk-free real interest rate of 3% and assuming that the real value of agricultural land does not rise over time.

After extensive debate, the 2007 Property Law did not give the holder of the use-right the power to offer it as collateral. This would have implied that, in the event of default, the use-right would revert to a person outside the village. This would conflict with the RLCL, which specifies that change in ownership of the use-right is the privilege of the village committee through major land reallocations every 30 years. In practice the frequency of such reallocations varies considerably across provinces and confidence in the new rules is not uniform. For example in Anhui, farmers were confident that this limit would be adhered to, but in Jiangxi few farmers were confident that their rights would be respected. In fact most of the villages have conducted such reallocations (Prosterman and B. Schwarzwalder, 2004).

Rural land can only be expropriated in the name of public interest by the State. Moreover, collectives are not allowed to own non-agricultural land (with the exception of land used by enterprises registered in the village for public services or housing for village residents). As a result, any change of use requires that the State requisition land held by the collective. When that has occurred, the eventual user of the land applies for conversion of the land to non-agricultural use. If granted, the county government issues a compulsory purchase order. Any acquisition exceeding 35 hectares has to be approved by the State Council; below that threshold the provincial government gives approval. There is now a procedure for holding hearings before the expropriation decision is taken but the law specifies that farmers need only be notified five days before the decision or hearing. Such a short delay makes the notification effectively into a quit notice.

The amounts of compensation to be paid by the State for expropriated land are determined by the 1998 Land Management Act (LMA). The most important compensation payments are not made directly to the farmers but to the collective (Table 9). It is then a decision of the village committee as to how to split the compensation between the naked-owner (itself) and the usufructuary. There is no legal guidance as to the amounts involved. The State Council has issued a number of policy guidelines (Document 28 of 2004) but unlike laws these are not opposable in courts.

There is no definition of the public interest either in law or by the courts. Any individual or company can apply to the State to conduct land acquisition on its behalf. As a result, the collective owners of land generally receive only a fraction of its true value. The absence of a definition of public interest means that, in a 17-province random survey, 60% of land expropriations in certain areas are for commercial uses (Zhu *et al.*, 2007). This represented a substantial increase from the 34% used for housing and commercial use in 2001 (Joint Investigating Group of the MLR, 2003). In a series of surveys, covering four Chinese cities: Nanjing, Ningbo, Wuhan, and Shijiazhuang. Nanjing and Ningbo, situated in the eastern part of the PRC, the total amount of payments of compensation under the land and resettlement categories paid to the village collective was less than 20% of the amount that the county or city government received from the sale of the non-agricultural land rights (China Land Survey Institute, 2005). There is some sign that the rules governing expropriation are beginning to change. Regulations in Guangdong province require that when a collective sells land for commercial use, the sale should be publicised and the price determined by negotiation or auction. When acquisition is genuinely for public interest purposes the LMA applies.

**Table 9. Compensation rules in the event of expropriation**

Object of compensation	Compensation paid to	Status	Amount of compensation
Land	Village collective (part to farmer)	Law	6-10 times average output value over past three years
Resettlement	Village collective (part to farmer)	Law	4-6 times average output value
Young crops	Use-right owner	Law	Varies by province, usually based on a standard crop yield
Structures	Use-right owner	Regulation	Ad-hoc standards that vary across provinces
Maintenance of use-right owners living standard	Use-right owner	Law	A variable amount such that first three payments do not exceed 30 times average output value.
Supplementary maintenance payment	Use-right owner	Policy guidance	State Council document
Compensation by shares	Use-right owner	Policy guidance	Shares in the company that invests the proceeds of compensation paid to the collective
Long-term preservation of use-right owner living standard	Use-right owner	Policy guidance	Integration into the labour force and social security system of the city that has taken the land. State Council document 28
Long term preservation	Use-right owner	Policy guidance	All land and resettlement used to establish a social security fund covering unemployment, medical insurance and pensions

Source: ADB (2005).

24. There have been attempts to organise rural pension schemes but they have failed to achieve the expected results. Regulations were promulgated in 1992 that allowed county governments to establish rural pension schemes. Administratively, the policy was a success. By 1997, nearly all counties and half of the townships had put in place the required administrative units. The scheme took the form of a voluntary savings account, the balance of which was converted to an annuity at age 60 at a uniform rate. No withdrawals from the account were allowed. The account paid a rate of interest of 8.8% compared to an inflation rate of 6.4% in 1992. Individuals were allowed complete flexibility in making payments. The local government guaranteed the pensions. This type of account has subsequently been used in nearly all the other pension systems that have been introduced.

25. This scheme, however, was not popular with the public (only 83 million people contributed at its peak), for several reasons: administrative costs were high, at nearly 29% of contributions, against a legal limit of 3% (ADB, 2002); contributions were used to finance local economic development projects; and some local governments tried to make the system compulsory. In 1997, an investigation requested by the State Council uncovered instances of fraud and showed that there were risks that local governments could not pay the pensions. It also documented that some local government officials had exaggerated the level of benefits and that some told participants benefits were guaranteed by the centre while telling the centre that they were self-supporting. The State Council recommended that the modalities of the rural scheme be rectified and that in higher-income areas liabilities be transferred to commercial companies. However, there was no agreement amongst ministries as to how the system should be changed. By 2007, the scheme still encompassed 52 million members spread across 90% of China's counties.

#### *Pilot rural schemes*

26. A number of new trial schemes were introduced around the country from 2003 onwards. By end-2008, some 12 million people were covered by these schemes in 464 counties. In the richer coastal provinces, some of the pilot schemes offer relatively high benefits (Qu, 2009). Perhaps more typical is the scheme introduced in Baoji City (Zhang and Dan, 2008).<sup>3</sup> Baoji is situated in a rural area of Shanxi and has an average per capita income one fifth that of the national urban average. In this city, there is now a two-tier voluntary system with an individual account and a basic pension. The latter is financed entirely by the county and city governments, which in addition pay a contribution to the individual account of 1/12<sup>th</sup> of the basic pension. At age 60, this account is transformed into a pension guaranteed by the local government. A minimum contribution period of 15 years is required to receive a pension from the individual account. The novelty is that the basic pension is only paid if the individual has liquidated an individual account. Moreover, people over 60 when the system started in 2007 are eligible for a basic pension, provided that their adult children join the scheme and are up-to-date with their contributions. Contributions are at a flat rate of 10% of average rural income in the area. As a result, participation is almost universal amongst those aged 45 to 59 but only half of the younger people participate. The cash for the scheme is held in three separate accounts at the Agricultural Bank of China.

27. By design, this pension scheme imposes a considerable fiscal burden on the local authority. The conversion factor for determining the monthly pension that can be drawn from an individual account is 139, reflecting the difference between the national average life expectancy at birth (71.5 years) and the age at retirement (60). It ought instead to reflect the life expectancy at age 60, which is 20 years, implying a conversion factor of 206, after taking into account an assumed real interest rate of 2%. Cash flow projections suggest that the scheme will eventually require substantial support from tax revenues, amounting to around 3.5% of average local income over the life of the account holder. This cost is due

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3. The word city is used here in its Chinese sense, referring to a territorial unit of government and not to an urban area. The city has nine rural counties that account for two-thirds of its population and three urban districts.

entirely to the shortfall in the individual account part. Such an amount is likely to be difficult to finance for the county governments.

28. The above schemes are primarily designed to cover the general rural population, particularly those rural residents whose main income source is farming. However, with rapid industrialisation and urbanisation, two new rural groups have emerged, with implications for the Chinese pension system: farmers who lost their land due to urbanisation and people who work locally in enterprises.

#### *Farmers losing their land*

29. Government policy has favoured rapid urbanisation, which has accelerated over the past decade. There are no official statistics of the number of people or households whose land has been taken and converted to non-agricultural land. One estimate is that between 1998 and 2006, households with about 2 million members lost their land each year, suggesting that 40 million people have lost land since 1988.<sup>4</sup> However, in 2005, only 4 million farmers had received social benefits as compensation for lost land rights (Guo, 2006).

30. The total compensation offered by the land management act (Box 1) represents reasonable compensation for agricultural land, on average. If, for example, it is assumed that costs are about one third of the gross output value, then a payment of 13 times the gross output value of the land would compensate a farmer for the loss of a 30-year usufruct, with a real discount rate of 3% (Zou and Oskam, 2007; Whiting, 2008). This compares to the maximum normal compensation that is payable of 17 years gross output value. However, compensation only accrues very partially to the farmer. The bulk of the payment goes to the collective as payment for the loss of its land. Such an approach is adopted because the law does not recognise the concept of compensation for the loss of a land-use right. The owner is compensated for the structure through the provision of alternative housing but it need not necessarily be in the same area (State Council Order No. 305).<sup>5</sup> There have been very few reported cases of compensating the holders for loss of urban land-use rights (Loh, 2004 and Fangwu, 2004).<sup>6</sup> In addition, the collective may be able to negotiate with the property developer to obtain the full value of the land in non-agricultural use.

31. One compensation method is to share development profits among villagers. The local village committee either gives shares in the company that develops the farm property or invests the proceeds of the sale and distributes a dividend to villagers. This procedure has been adopted in a number of Guangdong villages that have, in effect, become urban areas but remain rural administratively. The dividends can be quite large in certain cases (Smart and Smart, 2001). However, those living in the village, but not registered there, do not receive dividends.

32. Farmers can also be compensated through the payment of social security pensions. However, local authorities are reluctant to do this as the cost of providing a pension can be five to six times greater than the compensation amount required by law (Ding, 2007).

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4. The underlying assumptions are: *i*) all of the annual increase in built-up non-agricultural land came from arable farmland; *ii*) the households farming the land possessed the same holding rights as the national average rural household.

5. "Urban Housing Demolition and Relocation Management Regulations", June 6, 2001.

6. The authority that granted an urban land-use right can at any moment revoke it in the public interest without necessarily paying compensation. For an example in Guangzhou, see Loh (2004).

*Township social insurance schemes*

33. Various reforms have been initiated by local governments to cover employees in local enterprises. The national government has encouraged local governments to experiment according to conditions in their own area. Based on five pilot schemes, a pattern has emerged (National Social Security Institute, 2007):

- The systems are similar in design to the urban system: a pay-as-you-go part and an individual account. The pay-as-you-go part is financed by contributions from city and county governments. Contributions by villages go to either component.
- Typically, the cost of the system is financed one-third by local government, one-third by the village collective and one-third by the employees.
- If landless farmers join the urban pension system they cannot join the township scheme, but in some cases those who are members of the 1992 rural pension system can remain in that scheme as it was voluntary in nature.
- There are regulations concerning the minimum number of contributions, the minimum pensionable age and benefit payment methods.

These schemes have tended to be established in villages and townships that are on the fringes of major cities or developed areas. In some cases, the areas are only rural in name. In the Shanghai pilot, there were a number of problems in implementing the system, including rural inhabitants who were already in the urban system and whose employers switched to the less expensive township system, thereby reducing their benefits, and villagers who preferred to keep the benefits from well-off village collectives (Davies *et al.*, 2008).

***Recent policy changes***

34. In June 2009, the government launched a new rural pension scheme. It is voluntary in nature and will be introduced gradually throughout the country. By end-2009, 10% of all counties are to offer the scheme, rising to 50% in 2012, 80% in 2017 and complete coverage in 2020. The objective of the plan is to provide participants a pension equivalent to 25% of average per capita rural household income through a flat-rate non-contributory pension, plus a pension amounting to 10% of average household income in the area of the contributor, financed by individual contributions. The national scheme follows most of the features of the Baoji pilot described above. In particular, it features immediate payment of a pension to the elderly if their children pay contributions (Box 2).

35. This scheme raises a number of questions. The use of an individual account carries a risk that the final pension will not average either 10% of income over the contribution period or 10% of income in the area at retirement. Indeed, over the past decade, the rate of return on bank deposits and government bonds has been less than the growth of rural household incomes. If for example, the account is revalued each year by 2% in real terms and household real income grows by 6% annually, the eventual pension will not reach the targeted 10% of household income after 15 years of contributions. Rather, it would represent 6.0% of local income at retirement and 8.7% of average income over the contribution period.

**Box 2. The 2009 rural pension scheme**

The scheme has the following properties:

- A flat-rate pension of CNY 55 per month will be paid.
- An individual account will be created to which contributors can choose to pay between CNY 100 and 500, annually, in steps of CNY 100. The local government must pay at least CNY 30 per year to the account. Contributors must pay into the individual account for 15 years to obtain a pension from the account and the flat rate pension, or if older than 45 at the inception of the scheme they must make an extra contribution at age 60 in order to have a total of 15 years contributions.
- The monthly pension from the individual account will amount to the account balance divided by 139 and is payable for life by the local government.
- People over 60, at the introduction of the scheme, can draw a pension if their adult children join the scheme.
- The cost of the flat-rate pension will be paid entirely by the central government in central and western provinces and half by provincial governments in the east. Local governments are free to add to the basic pension and make payments to the individual accounts.
- The pension from the individual account will be paid by the local government, which is responsible for any shortfall in the cash-flow from the individual account part of the pension.
- The balances of the accounts must be invested in bank deposits, the return on which will be credited to the individual accounts.

Source: State Council (2009).

36. The replacement rate is also overstated by comparing it to average per capita household income. It would be better to compare it to the average income of the working age members of the household which is, on average, 40% higher than average household per capita income. Taking this and the previous factor into consideration, the two pensions together seem likely to represent a replacement rate for an average rural working person of only 15%.

**Table 10. Division of the costs of the new rural pension scheme**  
Per cent of total cost of benefits, present value terms

<b>Case 1: Zero real growth, real rate of return 2%</b>				
		Individual	Local government	Central government
Individual account	27.3	17.7	9.7	0.0
Parent's pension	30.5	0.0	15.2	15.2
Own basic pension	42.2	0.0	21.1	21.1
	100.0	17.7	46.0	36.3
<b>Case 2: Contributions and basic pension grow by in real terms by 6% annually</b>				
		Individual	Local government	Central government
Individual account	30.4	12.8	17.6	0.0
Parent's basic pension	30.4	0.0	15.2	15.2
Own basic pension	39.2	0.0	19.6	19.6
	100.0	12.8	52.4	34.8

Notes: In each case, the simulation assumes that a cohort of people aged 45 has 0.8 parents each and that cohorts of parents and children have a life expectancy conforming to the WHO unisex life table for China. The cohort aged 45 contributes for 15 years and receives rebates for early death. Once the individual accounts of the cohort are exhausted, the pension is paid by the local government.

Source: OECD estimates.

37. In the end, the individual account part of the benefit is likely to need a large government subsidy. If the conversion factor of the individual account is set at the same level as in the Shanxi pilot and the real rate of return on the accounts is assumed to be 2%, the government is actually setting the rate of return at 4.2% given the factor used for calculating the annuity. In other words, the county will have to pay over 40% of the benefits from the individual account. In addition, in the central provinces, nearly half of the flat-rate pension will be paid by the local governments (Table 10). Overall, the individual will only pay between 13% and 18% of the cost for the first participants in the scheme, depending on the discount rate that is used. The cost to local governments will likely fall mainly on the county authorities which currently have poor revenue bases and will be suffering from a declining labour force as migration continues in the future.

38. The chosen level of benefits for the rural pension scheme is also low relative to a number of other emerging countries. Most of them have in fact found it impossible to run voluntary contributory pension schemes in rural areas (Yang *et al.*, 2009). Hence, many have introduced flat-rate schemes funded from general taxation. Relative to these countries, the flat-rate part of the Chinese pension is low, as is the amount of public funds devoted to it (Table 11). On the assumption that the basic pension will be paid to every rural elderly person, the fiscal cost of the basic pension will amount to 0.18% of GDP in 2009. Part of the cost of the individual account pension will also fall on the government, putting the Chinese system in the middle of the range. Many countries, however, have held down the cost of the rural pension system through means-testing, which is not foreseen in China.

**Table 11. A comparison of rural social pensions across emerging countries**

Various years between 1999 and 2005

Country	Type of pension	Eligibility age		Monthly benefit (USD)	Cost (per cent of GDP)	Per capita GDP in 2006
		men	women			
South Africa	Means tested	65	60	109	1.40	8 940
Brazil	Means tested	60	55	140	0.90	8 700
Chile	Means tested		65	75	0.38	11 360
Argentina	Means tested		70	88	0.23	11 670
<b>China (2009)</b>	<b>Universal</b>		<b>60</b>	<b>6</b>	<b>0.22</b>	<b>5 968</b>
Bangladesh	Means tested		62	2	0.03	1 230
Vietnam	Means tested		60	6	0.02	2 310
India	Means tested		65	4	0.01	2 470

Source: Helpage International (2006), OECD.

39. Despite its modest cost relative to GDP, the pension scheme will cover the whole country only by 2020. Comparing China's economic situation to that of OECD countries when they first introduced pensions for the rural population, it would seem that China could afford to go faster. The share of employment in agriculture is similar to that in the OECD countries that adopted rural pensions early on (Table 12). Moreover, in China the share of the agricultural and fishing sector in GDP is similar to that in the late adopters and is well below that in the early adopters. Finally, *per capita* income in China in 2009 well exceeds that in OECD countries when they first introduced rural pensions.

**Table 12. Economic structures when rural social insurance was introduced**

	Date of introduction	Agricultural workforce	Agricultural value added	GDP per capita in year of introduction, constant 2005 prices, international \$
		% of whole economy total		
<b>Early adopters</b>		<b>40.3</b>	<b>26.9</b>	<b>4 725</b>
Portugal	1919	52.7	n.a.	1 958
Denmark	1891	44.9	37.0	2 778
Spain	1947	48.8	41.0	3 711
Sweden	1913	46.2	23.0	4 230
Greece	1961	55.3	23.0	6 527
United Kingdom	1946	5.1	7.0	6 543
Italy	1957	29.0	17.0	7 331
<b>Late adopters</b>				
France	1952	27.0	13.0	9 450
Germany	1957	13.4	7.0	9 523
Netherlands	1957	10.7	11.0	11 379
Belgium	1967	5.5	5.0	12 914
Ireland	1988	15.4	10.3	15 314
United States	1950	12.2	6.8	16 946
<i>Memorandum</i>				
China	<b>2009</b>	<b>40.8</b>	<b>11.3</b>	<b>5 919</b>

Source: GDP per capita: 1980 to the present, World Development Indicators, World Bank; prior to 1980, Maddison (2006); introduction of rural pensions: ADB (2007). United States: Employment and primary GDP: Bureau of Labor Statistics and Bureau of Economic Affairs.

### Assessment

40. The need for a system to provide support for the rural elderly has become increasingly evident over the past decade and will become even more so as migration to the cities continues. The existing inter-generational support system for families may be more difficult to sustain as migrants become more settled and eventually stay permanently in cities. So far, migration has been a positive factor for the elderly: those with migrant children are more likely to consider themselves well-off. Even so, the lack of a pension does make rural people feel poor (Table 8).

41. The new programme to provide pensions to the elderly in rural areas is a major step forward. It is better designed than the previous rural system in that it offers strong incentives to people with elderly parents to contribute, through the payment of pensions to the parents of those who contribute. The Shanxi pilot based on this incentive has generated almost complete coverage of those above 45, even though the county is extremely poor and contributions are high. The design of the system comes at the price of considerable fiscal incentives. The overall cost would seem to be manageable, but its distribution between the different levels of government remains a major problem. In particular, the eventual cost of guaranteeing the payment from the individual accounts will fall on the local authorities, which is the level of government with the least fiscal resources.

42. Even if pooling at the provincial level were adopted, there are significant problems of equity with the new rural pension scheme due to the split of financing responsibilities between the different parties. A net present value analysis suggests that provincial and local governments in central regions of the country will bear more than half of the lifetime cost of the total scheme (including individual accounts) during the lifetime of the first generation of participants. This is higher than the 30% of total cost that the central government estimates will be borne sub-nationally. The difference is due to local governments guaranteeing shortfalls in the individual accounts.

43. There is a paradox in introducing a scheme to help the less-well off in society when more than half of its cost will have to be borne by the least well-off governments and citizens. Moreover, even within provinces redistribution will be limited both because the most progressive tax (that on income) is allocated to the central government and the contributions to the rural pension scheme are flat rate. The situation will be even worse over the long term if provinces pass the burden to counties, which have the least financial resources. This situation contrasts markedly to that in the United States when social security was widened to include farmers. Then, the directors of social assistance in the poorer rural states (Texas, Oklahoma and Kansas amongst others) testified of the growing burden of social welfare to the elderly (Finegold, 1988). The federal government became entirely responsible for the rural pension scheme, leading to significant transfers to the poorer states and counties. Against this backdrop, the financing of rural pensions in China should be progressively transferred to central government during the roll-out period.

44. A second argument for centralisation of finance is that the burden of ageing is going to fall excessively on rural areas. Urban areas will benefit from largely permanent migration. The cities will benefit from a young labour force, while rural areas will be left with a steadily increasing dependency ratio.

45. A further problem is the coexistence of different pension systems in rural areas: for all residents, for expropriated farmers and for employees of enterprises in administratively rural areas.<sup>7</sup> The method for compensating the expropriated farmers by granting of pensions is being reviewed. One proposal is that all compensation for land should be paid into the individual account. This is an excessively rigorous requirement. Compensation for the loss of land-use rights should reflect the discounted value of the right to use the land (*i.e.* the rent) as well as the loss of labour income. Farmers may prefer to use the compensation to move to a new location or to establish a business. Hence, land compensation should flow directly to the farmer, with the village collective only collecting the development value and the farmer being free to use the compensation as needed.

### **The urban old-age support system**

46. China's national urban pension system was put in place in 1951. This enterprise-based system lasted until the mid-1990s, when the burden on companies became too large, given the competitive pressures they faced and the consequent need for downsizing. By 1997, in Liaoning province for example, a centre of heavy industry, over one-quarter of SOEs were no longer paying pensions to their former employees (Hurst and O'Brien, 2002). The government therefore introduced a new pension system that shifted the responsibility for pensions from the employees' enterprise to the local government.

47. The new system did not change the very low retirement ages of the previous one and set the contribution rate at the high level of 28% of an individual's standard wage, of which 20 percentage points were paid by the employer and 8 by the employee. The retirement age for all men was 60, while it was 50 or 55 for women depending on whether they were workers or managers. For those working in dangerous and hazardous industries the retirement age could be up to five years earlier. Based on a sample of seven provinces and municipalities, the effective retirement age appears to be 53 for men and women taken together (Sin, 2005).

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7. Many areas treated as rural administratively need not necessarily be rural in economic terms. For instance, Dongguan in Guangdong has a significant number of people whose mothers were born in a true rural area and who consequently are treated administratively as rural citizens even if these villages are urban in all but administrative terms. These urban "rural villages" are able to pay relatively high pensions to their officially registered elderly people.

48. The new system featured a different method of calculating the level of social security pensions, with provisions for grandfathering previously-acquired pension rights. The major innovation was to split the pension into two components: a redistributive one, based on the average wage in the area where the employee worked, and an individualised one related to the employee's career-average earnings. The first component was meant to provide a pension of 20% of final earnings for the average worker after 35 years of work (corresponding to an accrual rate of 0.57% per year). The second component was known as an individual account. A record was kept of the contributions of each employee and of the employer. Over time, these contributions were to be revalued by the rate of interest on one-year bank deposits. On retirement, a monthly pension was paid equivalent to the revalued contributions divided by 120. Each pension payment was debited from the individual's account. When the balance was zero, the government continued to pay the pension. Provided that interest rates were equal to the growth of average earnings, this part of the system was designed to generate a replacement rate of 38.5% of earnings. Thus, together with the first 20% component, the overall target replacement rate for the average earner was set at 58.5% of average earnings on retirement.

49. Originally, the plan called for the contributions to the individual accounts to be invested in bank deposits or government securities. However, the contributions were used to pay current pensions, giving rise to the phenomenon of "empty accounts". In reality, though, the accounts were backed by an explicit promise of the government to pay the pensions. Various initiatives have been taken over the past decade to partially prefund the individual account pension liability, given that full funding had proved too costly to implement initially. This prefunding is achieved through the National Social Security Fund (NSSF) created in 2000.

#### *Parametric reform in 2005*

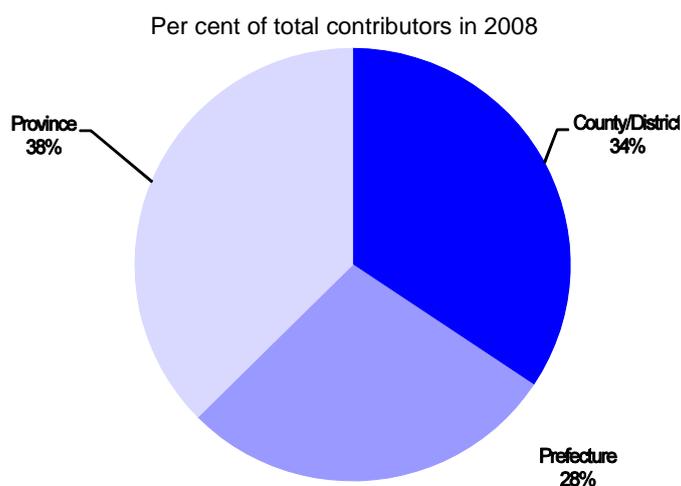
50. The method of calculating the pension was changed in 2005 but the overall contribution rate and the retirement age remained unchanged. The system now has three components. The *first* is a flat rate pension that is related to the average wage in the area where the employee works. The importance of this component was slightly reduced, making the system slightly less redistributive. The *second* newly introduced component relates an individual's pensions to his lifetime average earnings, revalued by the growth of average earnings in the area where the employee worked. The *third* component is also based on the lifetime average earnings of an individual, but in this component the earnings are revalued by the rate of interest on one-year bank deposits. This last component of the system is called an "individual account". In effect, it is very similar to the second component of the pension, especially as the balance of the account is generally a book entry rather than representing an investment in financial assets. Overall, the first two components are designed to give a replacement rate of 35% for the average worker, while the government projects a replacement rate of 24.2% for the third component. This level of pension from the third component will only be achieved if the bank deposit rate equals the rate of growth of average earnings. Given the expected strong growth of wages in the next decade such a development seems unlikely.

51. The reform was introduced because of the realisation that the "individual account" part of the previous system would not deliver an adequate pension. The revaluation factor (the bank deposit rate) was systematically below the average growth of earnings, leading to a falling replacement rate from this component of the system. The reform reduced the weight of this component in the total pension, making for a slower decline in the replacement rate at retirement than under the 1998 system. After retirement, there is no legal formula determining the size of pension increases, but pensions have generally been increased by between 40% and 60% of the growth in average earnings.

### *Geographic pooling of pension expenditure*

52. While the rules described above may give the impression that there is a national social security pension policy, this is not the case. The Ministry of Human Resources and Social Security (MOHRSS) sets national guidelines that are implemented locally. Shifting the responsibility for pensions from enterprises to municipal authorities gave rise to thousands of separate pension systems, each with its own contribution rates. There has been some consolidation, but by end-2008 there were still around 1 000 separate regimes. At present arrangements for transferring contributions between regimes are limited to people who move from government employment to the urban enterprise system. Consequently, movement between schemes can strongly affect a person's pension entitlements.

**Figure 6. Pooling arrangements for pensions**



Source: EU-MOHRSS (2009).

53. In September 2007, the MOHRSS instructed provinces to implement a provincial system for sharing revenue and expenditure (known as provincial pooling). By end-2008, however, only 38% of the contributors were covered by provincial pooling (Figure 6), and even in those cases, administrative and financial arrangements vary within the province. With provincial pooling, a uniform contribution rate applies throughout the province. In many cases, benefit rules are then also uniform, with the balance between revenue and expenditure accruing to the provincial government and use of the province-wide average wage to determine the flat-rate pension. In some provinces, however, the wage rate in the locality

**Table 13. Administrative arrangements under provincial pooling**

	Provincial	Prefectural	Local
Benefit base	Provincial wage	Prefectural wage	Local/District wage
Payment of benefits	Local	Local	Local
Payment of contributions	Provincial	Prefectural	Local
Contribution rate	Provincial	Provincial	Provincial
Surpluses	Provincial	Remitted to province	Remitted to province
Deficit	Provincial budget	Shared with province	Shared with province
Administration	Costs and staff at province level	Costs at province, staff at local	Costs and staff local

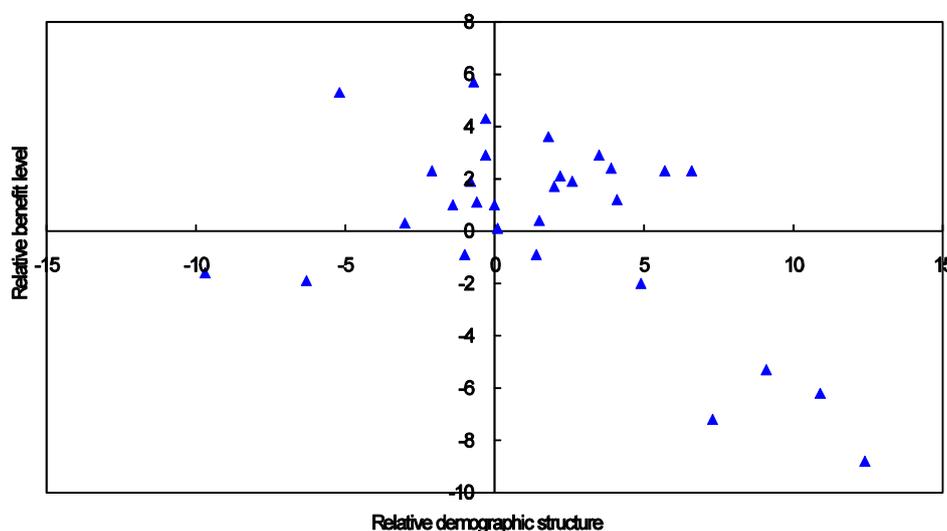
Source: EU-MOHRSS (2009).

of the individual continues to be used. Most of the provincial pooling takes place in the west of the country (*i.e.* in areas dependent on central government transfers) or in city provinces (with a limited geographic areas). The other method of provincial pooling is that local government remains responsible for collection and payment, but surpluses are remitted to the province. Deficits are shared between levels of government (Table 13).

54. While provincial pooling helps reduce disparities within provinces, pension systems vary considerably across provinces. The differences pertain to the average contribution rate, the replacement rate and the extent to which the governments and municipalities are accumulating surpluses in their pension accounts. Nationally, the average contribution rate was estimated at only 18.6% in 2003, against a theoretical level of 28%.<sup>8</sup>

**Figure 7. Relative demographic and benefit level across provinces**

Deviation of provincial measure from the national average<sup>1</sup>



1. A negative number for the demographic indicators indicates a low number of retirees per worker in the province.

Source: Wang (2006).

55. The variation in contribution rates mainly reflects demographic differences across provinces (Table 14). In 2003, the effective contribution rate (measured as the ratio of the average contribution to the average wage) varied by a factor of more than 2 to 1. The lowest rates were in coastal areas such as Guangdong and Zhejiang, where the workforce is mostly young and the dependency rate relatively low (Table 14, column 2). Moreover, in both cases, contributions vastly exceed expenses, with the accumulated surplus representing over one year's contributions (3% and 2% of provincial GDP, respectively). As a result, if Guangdong were to adopt a strict pay-as-you-go rule, the pension contribution rate could fall to just 9%. The province benefits from rapid population growth and the fact that migrants contribute but rarely claim benefits (except for the balance in their individual account) as they move out of the province. One town (Dongguan, where one-third of the world's toys are produced) has 300 contributors per retiree. Even for the province as a whole the ratio is six per retiree. At the other end of the spectrum, Shanghai had 1.8 workers per retiree. Such "older" provinces were only able to keep contributions at a reasonable level by lowering replacement rates, presumably by exercising some discretion over the scale of post-retirement increases for pensioners. The provinces with relatively low dependency ratios have relatively high pension

8. This estimate assumes that all contributions came from employees and employers. In practice, the self-employed paid some contributions, usually at a rate of 20%, implying that the estimated contribution rate is overstated.

levels, even though the pension system parameters are set nationally. Hence, not only do local pensions systems present varying contribution rates, but they also appear to adapt pension levels to local conditions (Figure 7). However, this relationship tends to be asymmetric: provinces with favourable demographics tend not to raise benefits but to increase savings, whereas those with unfavourable demographics lower benefits. As a result, just five provinces accounted for half of the national surplus. By contrast, almost two-thirds of the provinces had deficits which had to be made up by transfers from central government, rather than by cross-provincial transfers.

**Table 14. Decomposition of the differences in contribution rates by province**

2003

Region/ province	Contribution rate	Effect of dependency ratio	Effect of replacement ratio	Annual surplus	Total surplus	
					% of average annual wage	Months of contributions
Nationwide	18.6	0.0	0.0	0.0		
Guangdong	11.2	-9.7	-1.6	3.9	17.9	19.1
Zhejiang	13.8	-6.3	-1.9	3.5	14.3	12.4
Shandong	21.6	-5.2	5.3	2.8	15.2	8.5
Beijing	21.0	7.3	-7.2	2.3	4.9	2.8
Xinjiang	24.5	-0.3	4.3	1.8	29.1	14.3
Jiangsu	18.1	-1.0	-0.9	1.4	8.7	5.8
Ningxia	19.5	-1.4	1.0	1.3	26.1	16.1
Fujian	17.1	-3.0	0.3	1.1	11.4	8.0
Shanxi	23.9	-0.7	5.7	0.3	23.6	11.9
Hebei	21.3	-0.3	2.9	0.1	15.5	8.7
Shanghai	22.2	12.4	-8.8	0.0	6.0	3.2
Henan	18.4	-2.1	2.3	-0.4	15.7	10.2
Hunan	18.8	1.5	0.4	-1.7	13.3	8.5
Sichuan	25.8	6.6	2.3	-1.8	21.3	9.9
Guizhou	22.6	3.9	2.4	-2.2	24.1	12.8
Guangxi	16.6	0.1	0.1	-2.2	14.2	10.2
Inner Mongolia	17.2	-0.8	1.9	-2.6	10.5	7.3
Anhui	16.8	0.0	1.0	-2.8	6.9	4.9
Hubei	16.0	-0.6	1.1	-3.1	7.3	5.5
Jiangxi	15.9	1.4	-0.9	-3.2	11.1	8.4
Liaoning	18.3	4.9	-2.0	-3.3	16.0	10.5
Jilin	19.7	2.2	2.1	-3.3	7.6	4.6
Yunnan	23.0	5.7	2.3	-3.6	19.7	10.3
Heilongjiang	18.8	2.6	1.9	-4.4	12.8	8.2
Tianjin	19.0	10.9	-6.2	-4.4	6.3	4.0
Gansu	19.4	1.8	3.6	-4.6	11.6	7.1
Shaanxi	17.2	2.0	1.7	-5.2	6.7	4.7
Chongqing	16.7	9.1	-5.3	-5.6	6.7	4.8
Hainan	17.5	4.1	1.2	-6.4	12.2	8.4
Qinghai	15.6	3.5	2.9	-9.4	1.0	0.8
Tibet	22.6	17.4	2.6	-15.9	0.0	0.0

Source: Wang (2006).

### *Pre-funding of pension benefits*

56. The introduction of individual accounts in 1997 was meant to link pensions to the performance of the assets acquired with the contributions to the individual accounts. As noted, however, these contributions were generally treated as government receipts available for spending. Nonetheless, the lifetime contributions were revalued using the interest rate on bank deposits. The failure to invest money channelled to the individual accounts has sparked controversy about “empty” individual accounts and

whether the government should set aside funds to purchase bank deposits and government securities for these accounts. At end-2008, 13 provinces, representing about 45% of the contribution base, had made some effort to create separate investment structures to hold assets for the individual accounts. The funding was split between the provincial and the central government, depending on the income level of the province. The amount of cash transferred to the separate investment accounts was scaled down over time. For the first province in 2001, the transfer amounted to 8% of wages, this was reduced to 5% for the next two in 2004. Thereafter, the transfer rate was set at 3% of wages. Paradoxically, in all cases, there was a promise to gradually raise the transfer to 8% of wages. Overall, the current plans suggest that about 0.5% of the GDP of the 13 provinces has been set aside for these accounts. For nine of the provinces, the total amount of the transfer from the central government to the individual accounts is managed by the NSSF, elsewhere the funds are managed locally.

57. Another attempt at pre-funding pensions was made in 2000. The government created the NSSF with the objective of accumulating assets to be used later to pay pensions (Table 15). The Fund has received a total transfer of CNY 285 billion from the government since its creation (an average of 0.2% of GDP per year). These transfers have taken the form of budgetary transfers and an obligatory payment from the owners of the shares of SOEs when an initial public offering of the shares was made on the stock market. This tax amounted to 10% of the value of the IPO. In addition, the profits of the national lottery and the amounts set aside by the central government and nine provincial governments to fund the individual accounts are also transferred to the NSSF. Finally, the Fund benefited from being able to purchase shares in the major three commercial banks before their sale on the stock market at a very substantial discount. After the IPO, the NSSF made a gain of CNY 40.5 billion which could be regarded as a transfer from the government rather than an investment return (Leckie and Pan, 2006).

**Table 15. Income and assets of Social Security funds**

CNY and %

	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>National Social Security Fund</b>									
Total transfers from government	20.0	59.5	41.6	4.9	27.8	22.9	62.7	46.0	
Budgetary transfer from central government	20.0	47.3	30.4	0.0	17.1	10.0	10.0	10.0	
Transfer from sale of state shares	0.0	12.2	8.8	0.4	4.7	8.3	40.7	12.5	
Lottery income	0.0	0.0	2.4	4.5	6.0	4.6	7.4	8.3	
Individual account	0.0	0.0	0.0	0.0	0.0	0.0	4.6	15.2	
Investment income including realised gains	0.0	1.0	2.1	3.4	10.8	17.8	8.3	110.9	
Total income	20.0	60.5	43.7	8.3	38.6	40.7	71.0	156.9	
Assets	20.0	80.5	124.2	132.5	171.1	211.8	282.8	439.7	562.3
Assets as % of GDP	0.2	0.7	1.0	1.0	1.1	1.2	1.3	1.7	1.9
<b>Local pension funds</b>	76.1	81.9	124.4	176.5	249.9	350.7	486.9	675.8	993.1
Assets as % of GDP	0.8	0.7	1.0	1.3	1.6	1.9	2.3	2.6	3.3

Source: Annual Report of the National Social Security Fund and MOHRSS.

58. The Fund does not make extensive disclosure of its performance. For example, its 2007 annual report was nine pages long against the nearly 200 pages of disclosure of the California Public Employees' Pension Fund whose assets were twice as large as the NSSF's in 2008. Until 2008, the NSSF did not even report the market value of its assets in its account, making it impossible to calculate its investment

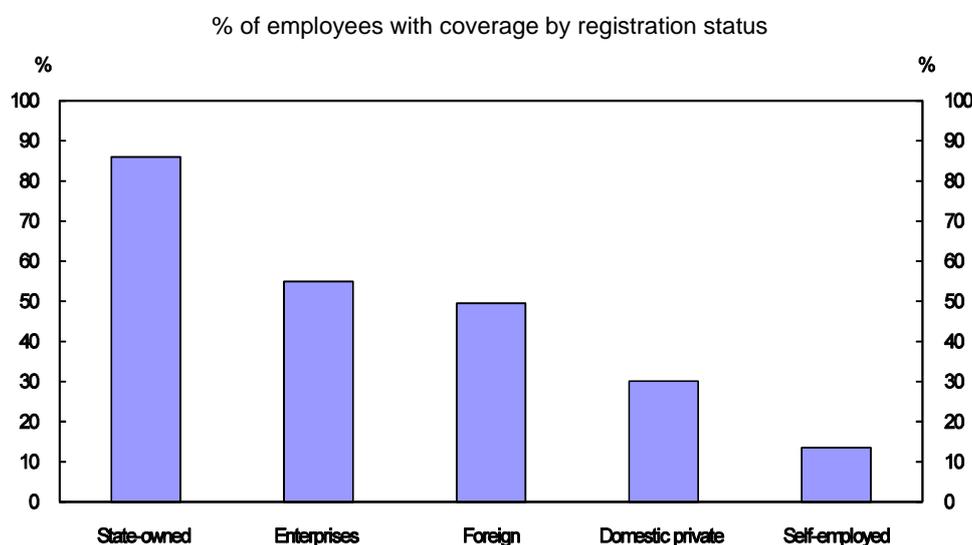
performance. The published returns reflected only profits that were realised in a given year. In 2008, the Fund changed to using a partial market valuation for its balance sheet, depending on whether the asset was to be held to maturity. Such a valuation method would normally be accompanied by a note to the accounts giving the market value of the assets. The market value of the assets was disclosed from time to time by the chairman in speeches reported in the press, but this practice has now been discontinued. If it is assumed that the ratio of disclosed value to the true market value was the same at end 2008 as at the end of 2007, then given the timing of the cash inflows into the fund, the fund has earned an average real return of about 5.6% over the period of its existence.<sup>9</sup> By end-2008, the NSSF assets were equivalent to 1.9% of GDP. In addition, the balances of local urban enterprise employee schemes amounted to 3.3% of GDP in 2008.

59. Since July 2009, the owners of all the SOEs listed on the stock market since 2006 have to surrender 10% of the equity of the listed companies to the NSSF. Problems have arisen with this measure since sometimes the government does not own 100% of these companies. In such cases, minority shareholders will need to be compensated. Overall, this transfer will boost the assets of the NSSF by about CNY 64 billion, somewhat less than 10% of its current value. While this measure increases the assets of the NSSF, it does not improve the government's ability to deal with future pension payments as the shares were already state property. However, the income flow to the government may increase as it will receive the full amount of dividends paid by these companies, instead of only a portion (OECD, 2010).

### *Problems with coverage*

60. Even today, the origin of the urban pension system as a welfare system for SOEs is still clearly evident in the coverage of the system. Membership is very high amongst the employees of these enterprises, lower for other enterprises and almost non-existent for the self-employed (Figure 8).

**Figure 8. Coverage of the pension system in towns and cities**



Source: 2005 Census tabulations.

9. At end 2007, the Chairman of the NSSF stated that the fund was worth CNY 516 billion at end 2007. The mix of market and historic cost now used gives the market value at end 2007 as CNY 562 billion. The gain on holdings of bank shares allocated to the NSSF at IPO prices has been treated as a fiscal transfer.

61. A further problem is that workers who have changed their place of residence from where they were born are largely excluded from social insurance, including pensions. Two factors are at work to reduce the social coverage of these “migrant” workers. First, migrants are concentrated amongst the self-employed and in flexible forms of employment with no labour contract (informal employment). Even local people in this type of employment have lower coverage (Table 16). For migrants, coverage in this category is almost non-existent. As the current pension contributions are above the rate that would be needed to pay a pension to the current generation of workers, the self-employed prefer to avoid this form of taxation if possible. Moreover, the fragmented system means that they lose benefits if they move between cities. Even amongst migrants in formal employment, coverage is lower, as migrants are under-represented in SOEs. Other employers often try to avoid paying contributions for their employees. This under-representation of migrants is found in most types of social insurance, except coverage for industrial injuries. Overall, in 2008, only 17% of migrant workers in urban areas were covered by the pension system, according to a MOHRSS survey.

**Table 16. Social coverage for migrant workers**

2003, Informal and formal sectors in five cities, in per cent

	Informal employment		Formal employment	
	Locals	Migrants	Locals	Migrants
Pension	54.8	2.1	82.1	29.0
Unemployment insurance	12.6	0.4	39.7	17.8
Accident insurance	6.0	1.2	29.1	31.7
Health insurance	32.6	1.3	71.4	29.7

Source: Cai *et al.* (2008).

62. It is difficult to measure the evolution over time of the coverage of the urban employee pension system. While data on the number of contributors is available, an official series that measures the total number of people that ought to be part of the system is not published. Employees of the government and quasi-governmental units (public service units – PSUs) have their own pension system and so need to be excluded. Equally, the significant number of people who work in agriculture in urban areas should be excluded from those who could potentially join the urban employee system. These two exclusions can only be estimated from official sources, but suggests that about 85% of those working in urban areas could potentially be members of the urban pension system. On this basis, the coverage of the system was about 61% in 2007, up from 48% in 1998.

63. Many employers are willing to take steps to avoid paying contributions because of their high level. In addition to failing to declare the correct number of employees, or the correct wage bill, local authorities often allow newly established firms to decide which staff to include in the social system, or allow them to declare employees as having self-employed status with a lower contribution rate. The degree of accounting and administrative control over the social insurance agencies themselves could also be improved: there have been cases of agencies being bribed to lower contributions, delaying payments to government accounts in order to gain interest for their own budget, making investments in assets that are not permitted or abetting local government in illegal use of the funds (Wang, 2009).

64. One reason for poor compliance has been the absence of a national social security law but this may be soon rectified. The legal base for social security rests on State Council decisions and MOHRSS administrative regulations. This makes it difficult to inflict sufficiently high penalties on non-compliant employers: in Shanghai for instance the penalty is limited to payment of contributions that have been

evaded (Davies *et al.*, 2008). The government has recently issued a new social security law for consultation, which may overcome some of these problems. It will give the ability to impose penalties on enterprises that do not pay contributions and so should improve coverage of the system. However, while the law sets out the principle of a mix of individual accounts and other forms of pension, it does little to reduce uncertainty. In the tradition of Chinese lawmaking, it is very general. Nearly all the important elements for a pension system will be determined subsequently by Ministerial decree. In addition, with respect to rural pensions it is exhortatory, setting unclear objectives. There is no mention of the structure of the system (the level of pooling or whether contribution rates and benefit adjustments can vary by province).

### *Initiatives to raise coverage*

65. A number of initiatives have been introduced to try to improve participation among workers in the informal sector and portability. In 2005, the State Council issued a decision to improve the coverage of the self-employed and those with flexible forms of employment. A number of provinces implemented it, setting a flat contribution rate for this group of employees at 20% of the local average wage, with 8 percentage points being placed in an individual account. While this contribution rate is lower than for regular employees, those in flexible employment often earn less than the local average wage. As result, their effective contribution rate is higher. This may be one of the reasons why the coverage of self-employed remains low. Another reason is the lack of portability across pension systems. To address this problem, the government has suggested that when a person moves from one province to another all pension-related records be transferred to the new province. The level of retirement benefits of movers would be calculated taking into account all of their contributory history, regardless of geographic location. In practice, this mainly concerns migrant workers as the extent of cross-system mobility for urban workers is very limited – only 0.26% of the urban residents moved across provincial borders in 2007 and even within provinces annual mobility was only 0.88% (MOHRSS, 2009b).

66. The MOHRSS has also proposed to create a separate pension system for migrant rural workers in urban areas (MOHRSS, 2009c). The key parameters would include a lower contribution rate for employees (4-8% of wages) and employers (12% of payroll). All contributions would be deposited in the migrant worker's individual account. When migrant workers moved between systems, pension records would be kept at their locality until their normal retirement age and all of the person's contributory history at different localities would be recognised when calculating the pension. However, if they retired in a rural area and joined the new rural pension system, pension accumulation would be transferred to the local rural insurance bureau and they would be entitled to the relevant benefits. If they retired in rural areas and did not join the new rural pension system, the funds in the individual accounts would be paid to the migrant workers as a lump sum.

### *Assessment of the reforms*

67. The pension reform undertaken in 1997 lowered replacement rates and this fall is likely to continue under present rules. Indeed, prior to the reform, replacement rates were over 80% for enterprise employees. The stated objective of the reform was to lower replacement rates. This objective has more than been achieved with the ratio of the average pension to the average wage falling from 77% to 49% between 1990 and 2005. Two factors underpin this decline. First, the formula used to revalue pensions after retirement ensures that they increase much less rapidly than average wages. Secondly, the interest rate used to revalue the individual account has been less than wage growth. If the gap is five percentage points, then for men, it will halve the replacement rate at retirement, to 11.9% (Table 17). Overall, on this basis, the average replacement rate during retirement is likely to be only 31% for men, and even less for women. These calculations assume retirement at the official age, giving an average retirement age of 58 (after

weighting men and women together). The fall in the replacement rate would be even larger if the average effective retirement age of 54 found in a sample of seven localities were used.<sup>10</sup>

**Table 17. Replacement rate under various assumptions**

The impact of the wage - interest rate differential and less-than-full indexation, in %

	Pension from individual account			Basic pension	Basic pension plus individual account
	Interest rate = wage growth + 2	Interest rate = wage growth	Interest rate = wage growth - 5		Interest rate = wage growth - 5
	Replacement rate for a person earning the average wage				
<b>Men</b>					
On retirement	33.5	24.2	11.9	35.0	46.9
During retirement	23.9	17.3	8.5	25.0	33.5
<b>Men and women</b>					
On retirement	29.5	21.4	11.3	35	46.3
During retirement	21.0	15.2	8.1	25	33.1

Assumptions: A representative individual who survives to age 60 or 57 for men and women. During retirement real wage growth of 7% is assumed for 20 years and 3% thereafter. Inflation is assumed to be 2% and nominal pensions to grow at half the rate of nominal wages.

Source: OECD estimates.

68. The reforms have markedly lowered the pension wealth of individuals and probably raised the saving rate of urban households. According to one estimate, the 1997 reform cut the pension wealth of the youngest cohort in the labour force by 40% (Jin *et al.*, 2009). This estimate is likely to be on the low side in that it assumed that pensions would be indexed to wage growth and that the target replacement rate of nearly 60% would be achieved. Neither of these assumptions has proved realistic. By using micro-level income and consumption data, these authors find that the reduction in pension wealth had a marked impact on the household saving rate of younger cohorts in the labour force and can explain a significant proportion of the increase in the urban saving rate after the mid-1990s. It is not clear whether this impact will last, as the increase in the saving rate would generate assets equivalent to the loss in pension wealth after about eight years.

### *Projections of pension deficits*

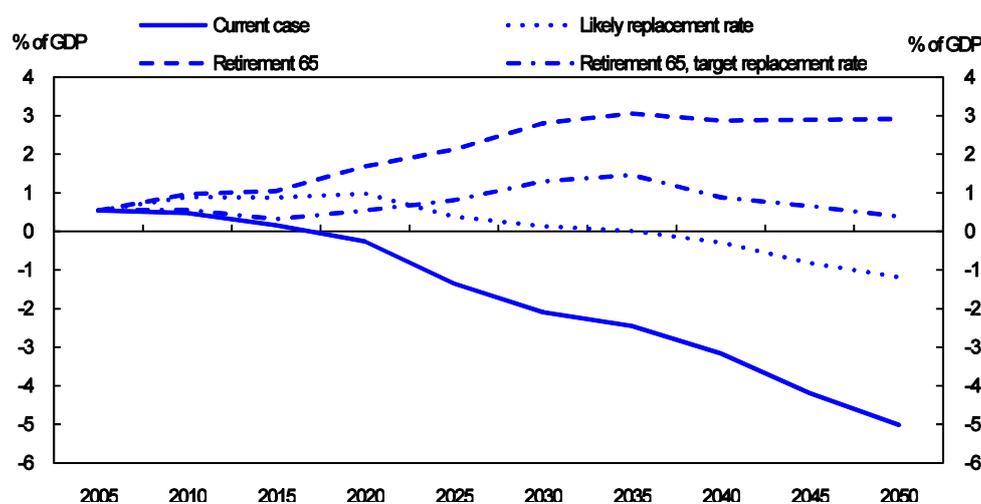
69. On the basis of the current urban enterprise employee pension system, a model of pension payments and contributions (Box 3) suggests that the pensions of future retirees could only be paid with a significant transfer from the budget to the social security funds (Figure 9). This will be the case even if the urban population increases markedly. The official portrayal of the system maintains it will deliver a replacement rate of 60% at retirement. In fact, it might be only 45%, meaning that the average pension paid may be as low as 31% of the average wage by 2050. Even on this basis, the system may require transfers from the budget, although much smaller than if the target replacement rate were to be reached.

10. The national average retirement age may be even lower, at 51.2 in 2000, according to an NDRC official, but no published statistics are available, see Yang (2004).

70. The system can be put on a sustainable basis by substantially raising the retirement age. The assessments presented below assume that the current average retirement age for men and women is 56, higher than the average of 53 at the end of the 1990s (which reflected widespread recourse to early retirement packages by state-owned companies). If the retirement age were raised to 65 – from the existing legal limits of 60 for men and 55 for women – the number of people of retirement age would fall by half over the next two decades and by another third further out into the future. As pension expenditure is likely to be of the order of 3% of GDP by 2050, such a change in entitlement would lower spending by between 1% and 1.5% of GDP, enough to ensure stability. Indeed, on this basis, it would be possible to raise the replacement ratio significantly (Figure 9).

71. The above projections do not separate out the individual accounts. Rather, the individual account and the pooling account are seen as one unit. This slightly understates expenditure since when the account holder dies the inheritors are entitled to the balance of an individual account. Apart from this, there is no impact on the projections from treating the individual account contributions as available to be used to pay pensions. If the individual accounts were to be ring-fenced, governmental financial assets would increase but so would public debt – as the pensions would have to be financed by borrowed money instead of using the individual account contributions. If the fund balances were more actively managed and were able to obtain a real return of 5%, the pension system would become slightly more sustainable. By 2050, in the scenario with retirement at 65 and a replacement ratio of 60%, the end-period surplus would be almost stable and the ratio of assets to GDP would be stable.

Figure 9. Simulation of pension deficits under different assumptions



Source: OECD calculations using data and methods from Wang (2009) and Yi (2008).

72. These projections need to be fine-tuned. More complete urban-rural population projections are required and the projections need to be tested for sensitivity to considerably lower fertility rates (the current UN projections assume a fertility rate well above that estimated by Chinese scholars). Even so, they do illustrate that with rapid urbanisation the current pay-as-you-go pensions system may be less stressed by ageing than many believe if the pension age is raised and institutional arrangements are put in place leading all of the growing number of urban residents to contribute to the pension system.

### Box 3. Assumptions underpinning the pension model

The model used to make the pension projections in this paper rests on a number of simplifying assumptions. The detailed information on the age structure of contributors and pensioners is not publicly available nor is the detailed employment data on the structure of the rural and urban labour force. There are also very few demographically-based models of the urbanisation process that allow the age structure of the urban and rural population to be separated as younger people move to the cities.

It has been necessary to adapt demographic projections made by others and to make some strong assumptions about the movement of the number of pensioners, contributors and the level of the average pension. These projections have been made on a coherent basis to gauge the likely movement of pensions and the balance between contributions and benefits. They have been made on a national basis, even though there are very different positions between provinces and the treatment of surpluses and deficits is asymmetric (surpluses remain in the province but deficits are covered by central government).

The pension scheme being modelled is based on urban areas and so a population projection is needed for the urban area separately from the national population projection. It has been assumed that by 2050, the urban population will have risen to 65% of the total and that the share of people over 65 in the total population will be 22%, about two-thirds the ratio in rural areas (Yi, 2008). The average age of retirement is assumed to be 56 (60 for men, 55 for non-manual women and 50 for manual women). The number of urban dwellers aged 56 and over is estimated using the national ratio of the over-56 population to the over-65 population. This ratio is then applied to the estimated number of urban people over 65. Then, the number of elderly who have been inactive, farmers or government employees, is deducted from the total over-56 population. The model assumes that the share of these groups in the population remains constant over time. An estimate of the working population is obtained by assuming that the portion of children in the population is similar in urban and rural areas (an assumption that could be improved). Once again an estimate of the number of employees eligible for the pension scheme is made by removing farmers and government employees.

The initial conditions for the model reflect the position in 2005, due to difficulties in obtaining information for 2007. The data show that the number of contributors to the urban scheme was only 58% of the number of eligible people but that on the other hand the number of pensioners appears to slightly exceed the number of eligible elderly people. This paradox may reflect the fact that when most of today's pensioners were employed, the labour market was far more regulated than today. Most people worked for SOEs and the number of self-employed and private sector workers was low.

The model assumes that the proportion of eligible workers that contribute to the scheme will gradually increase over time, in line with past trends. New laws may make it more difficult and costly for employers to evade taxation while the proportion of the self-employed is likely to fall as the share of the informal sector recedes. Urbanisation will see the number of people who moved from their birthplace rising to 400 million. It is assumed future policies will treat these people on an equal basis to other urban dwellers, that they will stay in urban areas and that their employers will enrol them in the urban social security system. As to pension benefits, the current pension system is unlikely to deliver its target replacement rate of 60% on retirement – 45% is being assumed as more likely. In addition, pensions are increased by only half the growth of wages. Consequently the value of pensions falls after retirement, and it is assumed here that the average pension falls to 33% of the average wage by 2050.

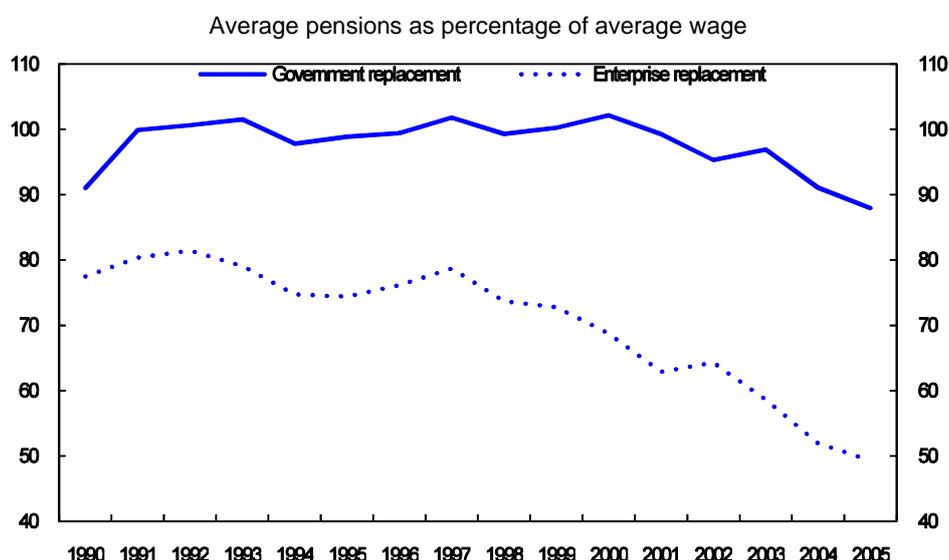
Source: Based on methodology from X. Wang (2009) and Yi (2008).

### *Government-employee pensions*

73. When the enterprise-based pension system was transferred to local governments and benefit rates were reduced for newcomers, no similar action was taken for government employees. As a result, their replacement rate has not fallen in the same way as that of enterprise workers (Figure 10). Indeed, the schedule of the accrual rates is such as to incite early retirement with high replacement rates and no reduction for taking retirement before the age of 60, which is neither efficient nor equitable *vis-à-vis* other workers. Government employees fall into two groups: employees of state and party organs and employees of public service units. Most are in the latter category (27 million out of total government employment of 37 million) and are found mainly in the health, education and welfare sectors. The cost of the pensions of

these groups has risen significantly and has reached 1% of GDP, almost half of the cost of the enterprise system despite covering less than one quarter of the number of employees. One major factor behind the high level of spending is the ability of employees of public service units to retire at 50 with high pensions due to high accumulation for early years of service (Hu and Herd, forthcoming).

**Figure 10. Pension replacement rates in the government and enterprise sector**



Source: Yearbook of Labour Statistics, various issues.

74. The government had proposed to integrate the employees of the public service units into the enterprise employee system (Hu and Herd, forthcoming). Pilot projects had been considered in a number of provinces. However, while the government had promised that existing employees would not be adversely affected by this reform, details of the supplementary pension system required to achieve this objective were never divulged. Given adverse employee reactions, the government has decided not to introduce the scheme until a later, unspecified date.

### *Private-sector pensions*

75. In 2004, the former “complementary pension insurance schemes” was renamed as “enterprise annuities” (EA), with a view to consolidate the Chinese EA market and strengthen regulation and supervision (Hu and Stewart, 2009). The EA schemes are run on a voluntary basis and have been so far mainly been set up by the large SOEs, with participation of few SMEs and private enterprises. According to the current rules, the employer contribution up to 5% of payroll is deductible before corporate tax, while the employee contribution (if any), investment income and pension payout are subject to taxation. This structure is not particularly tax-efficient for the average employee. The income tax exemption for employer contributions is worth little to the average employee as their marginal income tax is only 5%. In addition, the individual does not pay any tax on bank or bond interest nor on capital gains. Since 2005, the number of workers covered by EAs has risen by 1.2 million, a 12% increase, despite the number of plans rising from 23 000 to 33 000 (National Bureau of Statistics, 2008). The urban pension scheme has expanded more rapidly, with the result that the coverage of this type of supplementary pension has fallen from 7.0% to 6.9% of contributors to the urban pension schemes. Total funds under management have risen to CNY 191 billion (0.6% of GDP) at end-2008. Until 2007, the funds of the SOEs were managed by the local social insurance bureaus and this gave rise to cases of misuse, notably in Shanghai. Since then, the assets have been progressively transferred to commercial fund managers (mainly insurance companies).

76. In addition to the above-mentioned EA schemes, another form of voluntary private pension arrangement exists in China, *i.e.* life insurance. Under this system, companies contribute to an investment account managed by an insurance company in the name of the employee. For the time being there is no tax exemption for this tier from both employee and employer perspectives, except for some tax relief for approved life insurance products provided by insurance companies. Currently, subject to approval by the State Taxation Administration, over 500 life insurance products (individual and group), are entitled to be exempted from the business tax (approximately 5%), but not the corporate income tax (approximately 33%).

#### **Overall conclusion: further reform directions**

77. In the face of an ageing and increasingly urban population, a number of initiatives have been taken in recent years to reform pension arrangements in China. These are very segmented, with different regimes for the rural, urban and public sectors, as well as within each of them. In addition, a complementary private pension system is emerging, though it is still small. The segmentation of the basic pension system raises issues of efficiency, in that labour mobility is impeded, and fairness, to the extent work experience in one sector is not recognised for pension purposes after the individual moves to another sector. Some of the recent reforms have in fact added to the existing fragmentation, while other reforms, notably those providing for greater geographical pooling, have only partly been implemented. Another challenge is that under current rules, effective replacement rates are fairly low and are projected to decline further, both for rural and urban residents. This may be politically difficult to sustain in a rapidly ageing society, where the elderly live less and less with their descendants. A third challenge pertains to the distribution of the fiscal costs: with an ageing countryside, the present arrangements imply that much of the additional burden would be shouldered at sub-national levels by local governments with insufficient resources.

78. These challenges can be addressed by gradually consolidating the various regimes, increasing retirement ages and shifting more of the cost of rural pensions to the central government. Even if different schemes for different categories of workers (employees and self-employed notably) are to persist, each should be unified over time, first provincially and then nationally, phasing out the distinction between rural and urban residents. Retirement ages are currently very low and should be lifted incrementally, possibly in line with rising life expectancy, as is the case in some OECD countries.

### Bibliography

- ADB (2002), *Old-Age Pensions for the Rural Areas: From Land Reform to Globalization*, Asia Development Bank, Manila.
- All-China Women's Federation (2007), *Report on the Number of Left-Behind Children*, (in Chinese).
- Benjamin, D., L. Brandt and J. Fan (2003), "Ceaseless Toil? Health and Labor Supply of the Elderly in Rural China", *William Davidson Institute Working Papers*, No. 579.
- Bosworth, B., G. Burtless, Y. Kitamura and N. Takayama (2005), "Economic Resources of the Elderly: A Comparative Analysis", *ESRI Working Papers Series*, Tokyo.
- Cai F., Y. Du and M. Wang (2008), "Labour Market Developments in China: Situations, Legal Framework and Implications", *Consultancy report to the OECD*, Institute of Population and Labour Economics, Chinese Academy of Social Sciences.
- Cai, F., J. Giles and X. Meng (2006), "How Well Do Children Insure Parents Against Low Retirement Income? An Analysis Using Survey Data from Urban China", *Journal of Public Economics*, Vol. 90, No. 12.
- Cai, Y. (2008), "An Assessment of China's Fertility Level Using the Variable-r Method", *Demography*, Vol. 45, No. 2.
- China Land Survey Institute (2005), "Research on Valuation Methods for Land Acquisition Compensation", in ADB, *Capacity Building for Resettlement Risk Management: People's Republic of China Country Report*, Asia Development Bank, Manila.
- Coale, A. (1984), *Rapid Population Change in China, 1952-1982*, Commission on Behavioural and Social Sciences and Education, National Academy Press.
- Davies, G., I. Nielsen and R. Smyth (2008), "Correct Ideas and Social Security Reform in China: The Case of Shanghai's Township Insurance", in Nielsen, I. and R. Smyth (eds), *Migration and Social Protection In China*, World Scientific, Singapore.
- Ding, C. (2007), "Policy and Praxis of Land Acquisition in China", *Land Use Policy*, Vol. 24, No. 1. EU-China Social Security Reform Project (2009), *Report on Pooling Level for Pension Insurance in China*, <http://www.eucss.org.cn/index.php?id=134>.
- Fang, C., C.-F. Lee, S. McKibben, D. Poston and C. Walther (2005), "Fertility, Family Planning and Population Policy in China", Routledge Studies in Asia's Transformations.
- Finegold, K. (1988), "Agriculture and the Politics of US Social Provisions: Social Insurance and Food Stamps", in Weir, M., A. Orloff and T. Skocpol (eds), *The Politics of Social Policy in the United States*, Princeton University Press, Princeton.
- Giles, J. and D. Wang (2007), "The Family and Social Support for the Elderly in China", Presentation to the CCER, Beijing.
- Gu, B., F. Wang, Z. Guo and E. Zhang (2007), "China's Local and National Fertility Policies at the End of the Twentieth Century", *Population and Development Review*, Vol. 33, No. 1.
- Guo, Z. (2000), "Examining Life-Time Fertility using Recent Data on Total-Period Fertility", *Population Research*, Vol. 24, No. 1 (in Chinese).
- Guo, Z. (2006), "The Experiment and Progress of Rural Pension Insurance System in China", Presentation to a workshop on Extending Pension Coverage to Informal Sector Workers: The Asian Challenge, November.

- Guo, Z. (2008), "Changing Family Households in China", Presentation to a CASS-ESRC Joint Workshop on Ageing, 22-23 October, Beijing.
- Helpage International (2006), *Social Pensions in Low and Middle Income Countries*, London.
- Hermalin, A., M. Ofstedal and R. Tesfai (2006), "Future Characteristics of the Elderly in Developing Countries and their Implications for Policy", Elderly in Asia Report 06-62, Population Studies Center, University of Michigan.
- Hong Kong Council of Social Services (2007), *Elderly Services*, Hong Kong.
- Hu, Y.-W. and R. Herd (forthcoming), "Reforming Civil Service and Public Sector Unit Pensions in China", *OECD Economics Department Working Papers*.
- Hu, Y.-W. and F. Stewart (2009), "Licensing Regulation and the Supervisory Structure of Private Pensions: International Experience and Implications for China", *OECD Working Papers on Insurance and Private Pensions*, No. 33.
- Hurst, W. and K. O'Brien (2002), "China's Contentious Pensioners", *The China Quarterly*, No. 170.
- Jin, F., L. He and H. Sato (2009), "Public Pension and Household Saving: Evidence from China", *BOFIT Discussion Papers*, 2-2009, Bank of Finland, Institute for Economies in Transition, Helsinki.
- Joint Investigating Group of the Ministry of Land and Resources (2003), "Investigative Report of Purpose and Scope of Land Acquisition", in Lu, S. (ed.), *Examining Land Acquisition Problems - Reform Path Seeking*, Vol. II, China Land Press (in Chinese).
- Kim, I. and D. Maeda (2001), "A Comparative Study on Socio-Demographic Changes and Long-Term Health Care Needs of the Elderly in Japan and South Korea", *Journal of Cross-Cultural Gerontology*, Vol. 16, No. 3.
- Leckie, S. and N. Pan (2006), "A Review of the National Social Security Fund in China", *Pensions: An International Journal*, Vol. 12, No. 2.
- Lee, R. (2003), "The Demographic Transition: Three Centuries of Fundamental Change", *Journal of Economic Perspectives*, Vol. 17, No. 4.
- Li, H., J. Zhang and Y. Zhu (2005), "The Effect of the One-Child Policy on Fertility in China: Identification Based on the Differences-in-Differences", Department of Economics, The Chinese University of Hong Kong, Discussion Papers, No. 19.
- Liu, H. (2008), "The China Health and Nutrition Survey: An Important Database for Poverty and Inequality Research", *Journal of Economic Inequality*, Vol. 6, No. 4.
- Loh, S. (2004), "Revocation of Land Use Rights in China", *China Law and Practice*, December.
- Lutz L., G. Sen and A. Hussain (2002), "Public Pension Policy in the PRC since 1949 – A Changing Social Contract", in ADB (2002).
- Lutz, W., S. Scherbov, G. Cao, Q. Ren and X. Zheng (2007), "China's Uncertain Demographic Present and Future", *Vienna Yearbook of Population Research*, Austrian Academy of Sciences Press, Wien.
- Maddison, A. (2006), *The World Economy: Historical Statistics*, OECD, Paris.
- MOHRSS (2009a), "Tentative Measures on Transfer and Portability of the Basic Pension Benefit of the Employees in Urban Areas" (in Chinese).
- MOHRSS (2009b), "Media Conference on the Two New Provisional Pension Rules" (in Chinese).
- MOHRSS (2009c), "Rules on Migrant Workers' Participation in Basic Pension Insurance" (in Chinese).

- National Bureau of Statistics (2008), *Statistical Communiqué on Labour and Social Security Developments in 2008*, Beijing, March.
- National Population and Family Planning Commission (2009), *Statement of Minister Li Bin at the 42nd Session of the UN Commission on Population and Development*, March 31.
- National Social Security Institute (2007), *Study on the Rural Social Security System in China*, Ministry of Labour and Social Security and United Nations Development Programme, December.
- O'Neill, B. and S. Scherbov (2006), "Interpreting UN Urbanization Projections Using a Multi-state Model", Interim Report IR-06-012.
- OECD (2010), *Economic Survey of China*, Paris.
- Pang, L., A. de Brauw and S. Rozelle (2004), "Working Until You Drop: The Elderly of Rural China", *China Journal*, Vol. 52.
- Quad, H. (2009), "China Economic Spotlight", HSBC Global Research, Hong Kong.
- Retherford, R., M. Choe, J. Chen, X. Li and H. Cui (2005), "How Far Has Fertility in China Really Declined?", *Population and Development Review*, Vol. 31, No. 1.
- Saunders, P. (2006), "Poverty and Hardship among the Aged in Urban China", *Social Policy and Administration*, Vol. 40, No. 2.
- Saunders, P. (2007), "Comparing Poverty Among Older People in Urban China Internationally", *China Quarterly*, Vol. 190.
- Shi, S.-J. (2008), "The Emergence of the Notion of Retirement in Rural China: The Case of Rural Districts of Shanghai", *Zeitschrift für Gerontologie und Geriatrie*, Vol. 41, No. 5.
- Sin, Y. (2005), "Pension Liabilities and Reform Options for Old Age Insurance", Working Paper No. 2005-1, World Bank.
- Smart, A. and J. Smart (2001), "Local Citizenship: Welfare Reform Urban/Rural Status, and Exclusion in China", *Environment and Planning*, Vol. 33, No. 10.
- State Council (2005), "Decision Concerning the Urban Enterprise Pension System", quoted in Li, B. (2007), "Pension Reform in China: Who Are Left Out?", in Powell, J. and I. Cook (eds), *New Perspectives on China and Aging*, Nova Science Publishers.
- State Council (2009), *State Council Guidance on a New Pilot Project for Rural Social Old Age Insurance*, [http://www.gov.cn/zwggk/2009-09/04/content\\_1409216.htm](http://www.gov.cn/zwggk/2009-09/04/content_1409216.htm) (in Chinese).
- Wang, X. (2006), "Studies on Regional Difference in Old Age Pension System and its Economic Impact in China", Presentation to the Asia-Pacific Risk and Insurance Association Annual Conference, July, Tokyo.
- Wang, X. (2009), "Projecting Pension Deficits in China", Presentation to a Joint OECD-SIC Seminar, Beijing, July.
- Wang, Z. (2009), "Prevention of Fraud and Abuse of the Pension System: Situation, Problem and Measures", National Social Security Institute, EU-China Social Security Reform Co-operation Project.
- Whiting, S. (2008), "Public Finance and Land Disputes in Rural China", Presentation to a conference on Chinese reforms at the APARC Center at Stanford University, February.
- World Bank (2009), *From Poor Areas to Poor People: China's Evolving Poverty Reduction Agenda*, Washington D.C.

- Yang, Y., J. Williamson and C. Shen (2009), "Social Security for China's Rural Aged: A Proposal Based on a Universal Non-Contributory Pension", *International Journal of Social Welfare*, forthcoming.
- Yang, Y. (2004), Presentation to the 28th General Assembly of the International Social Security Association held in Beijing 2004 by the director of the Social Development Division of the National Development and Reform Commission, <http://www.china.org.cn/english/government/190457.htm>.
- Yi, Z. (2008), "Projecting the Demographic and Policy Impacts on Annual Pension Deficits – A Simple Method and Illustrative Application to China", Duke University and China Centre for Economic Research, School of Development, Peking University, mimeo.
- Zeng, Y. and Z. Wang (forthcoming), "New Lessons Learned From the 2000 Census", *China Review*.
- Zeng, Y., Z. Wang, J. Leiwen and D. Gu (2008), "Projection of Family Households and Elderly Living Arrangement in the Context of Rapid Population Aging in China", GENUS.
- Zhang, W. and T. Dan (2008), "The New Rural Social Pension Insurance Programme of Baoji City", Occasional Paper, Gerontology Research Institute of Renmin University, published by Help Aged Asia, Chiang Mai, Thailand.
- Zhu, K., R. Prosterman, J. Ye, L. Ping, J. Riedinger and O. Yiwen (2007), "The Rural Land Question in China: Analysis and Recommendations Based on a Seventeen-Province Survey", *New York University Journal of International Law and Politics*, Vol. 38, No. 4.
- Zing Y., Z. Wang, L. Jiang and D. Gu (2008), "Projection of Family Households and Elderly Living Arrangement in the Context of Rapid Population Aging in China - A Demographic Window of Opportunity Until 2030 and Serious Challenges Thereafter", *Genus*, Vol. LXIV, No. 1-2.
- Zou, X. and A. Oskam (2007), "A New Compensation Standard for Land Expropriation in China", *China & World Economy*, Vol. 15, No. 5.

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